



Session 1. Getting the most out of the Tribal Climate Resilience Program & Guide

Federal-wide Climate Tools and Resources







Margaret Herzog, PE, PMP, PhD
BIA TCRP IT/GIS Systems and Services

R9 Tribal EPA Conference, Session 1 of 2
Wednesday, 10/23/16 1:30-2:30PM

Session 1 of 2: Leveraging BIA TCRP Program & Tools

First session @ 1:30



BIA Tribal Climate Resilience Program

Federal-wide Tribal Climate Resilience Resource Guide

Steps to Considering Climate

Creating an Award-Winning Climate Proposal

Applying Indigenuity & Talking Circle Discussion

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
BIA Tribal Climate Resilience Program (Sealaska MBS Contractor, Denver, CO)
Margaret.Herzog@bia.gov, (720) 484-3353, work cell (720) 630-3817

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1. TRIBAL CLIMATE RESILIENCE PROGRAM

SELECT QUICK LINKS TO KEY RESOURCES

2015 Tribal Climate Education Network Archive

Tribal Climate Conference Papers and Presentations

2014 3rd National Climate Assessment Indigenous Peoples / Places

Quick Start Guide U.S. Climate Resilience Toolkit Tribal Nations

NAU ITEP Tribes & Climate Change: Profiles, Events, Tools, News, DB

Attend! ITEP ICC Events Calendar of Conferences, Courses, Webinars, More...

Pacific Northwest Tribal Climate Change Project & Network

Guidelines for Using Traditional Knowledge in Climate Initiatives

Expanded! Tribal Climate Change Guide-Funds, Plans Programs & Papers

FUNDING

Tools

Contact Us / Provide Feedback

Support


DOI / BIA & OTHER FEDERAL AGENCIES SEEK TO FULFILL TRUST RESPONSIBILITY TO TRIBAL NATIONS AND ALASKA NATIVES BY PROVIDING SUPPORT FOR *TRIBAL CLIMATE RESILIENCE*

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TRIBAL CLIMATE RESILIENCE PROGRAM



Program continues to expand! from 1 original Climate Coordinator

Rachael Novak became BIA first Climate Science Coordinator in DC in July 2015


Margaret Herzog, Denver, started February 2015 to build IT/GIS systems and services with Branch of Geospatial [BOGS support](#)

Three BIA Regional Climate Liaisons, Anchorage, AK
Corballis, OR, and Tuscon, AZ, and likely will start by end of year

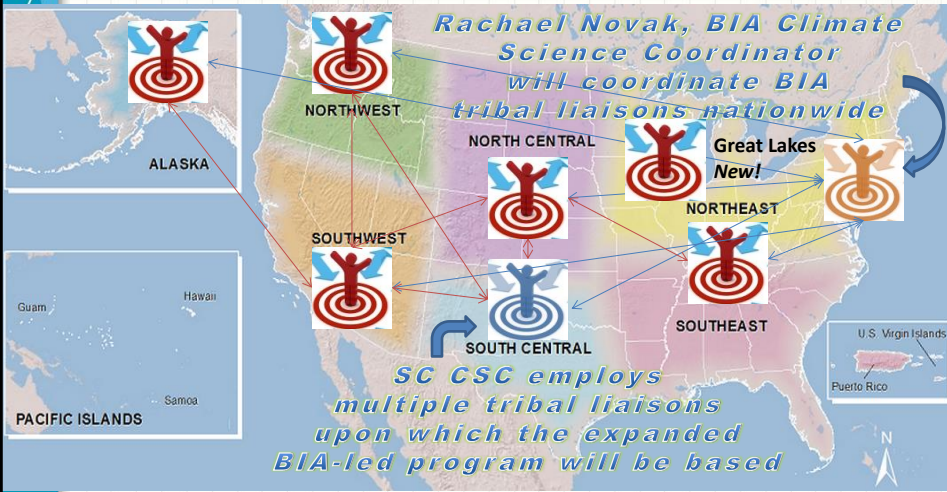
Three BIA Regional Climate Liaisons, for NC CSC, Midwest area, and NE/SE CSCs (BIA Eastern RO equivalent), will be selected shortly and likely start in early spring

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TRIBAL CLIMATE RESILIENCE PROGRAM




Six CSC tribal liaisons (in red) are being deployed soon!



Rachael Novak, BIA Climate Science Coordinator will coordinate BIA tribal liaisons nationwide

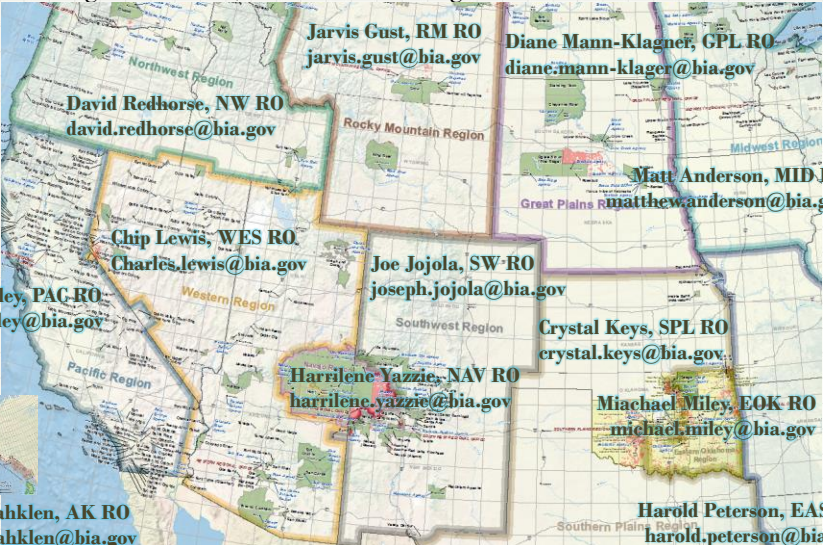
SC CSC employs multiple tribal liaisons upon which the expanded BIA-led program will be based




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Each RO has a designated climate contact

BIA Regional Offices, each includes a Regional Climate Contact!



| Region | Contact Name | Email |
|------------------------|---------------------------|---------------------------|
| Northwest Region | Jarvis Gust, RM RO | jarvis.gust@bia.gov |
| Rocky Mountain Region | Diane Mann-Klager, GPL RO | diane.mann-klager@bia.gov |
| Midwest Region | Matt Anderson, MID RO | matthew.anderson@bia.gov |
| Great Plains Region | Crystal Keys, SPL RO | crystal.keys@bia.gov |
| Southwest Region | Joe Jojola, SW RO | joseph.jojola@bia.gov |
| Western Region | Chip Lewis, WES RO | charles.lewis@bia.gov |
| Pacific Region | John Mosley, PAC RO | john.mosley@bia.gov |
| Pacific Region | David Redhorse, NW RO | david.redhorse@bia.gov |
| Southwest Region | Harrilene Yazzie, NAV RO | harrilene.yazzie@bia.gov |
| Southwest Region | Michael Miley, EOK RO | michael.miley@bia.gov |
| Southern Plains Region | Harold Peterson, EAS RO | harold.peterson@bia.gov |
| Alaska | Mark Kahklen, AK RO | Mark.Kahklen@bia.gov |

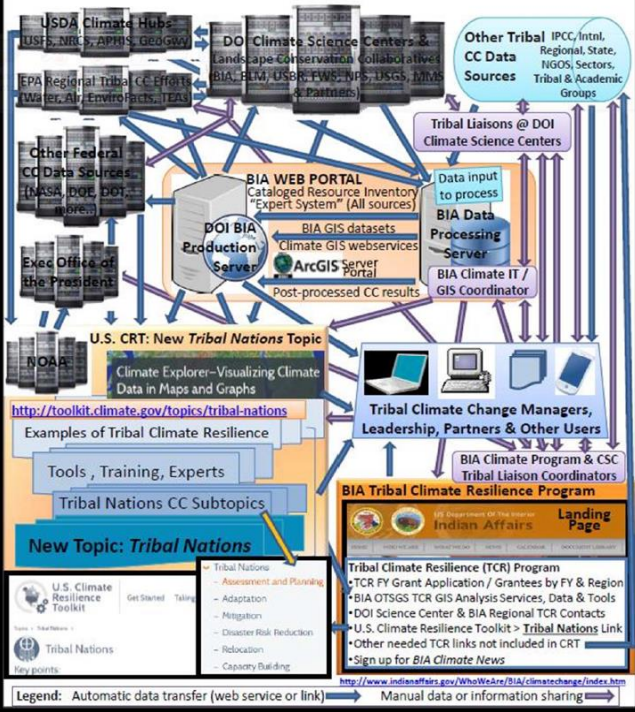


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Support to build TRIBAL CLIMATE RESILIENCE

- Resource Guidebook
- CRT Tribal Nations
- Data.Gov Tribal Nations
- TCR Website
- GIS Web Portal
- TCAP/VA Tech Support

Led by Margaret T. Herzog, PE, PMP, PhD with 25 years of Intl, Federal, State, Watershed, and Local Govt. Experience



The flowchart illustrates the BIA Tribal Climate Resilience Program's data and information flow. It starts with various data sources on the left, including USDA Climate Hubs, EPA Regional Tribal CC Efforts, and other federal and tribal data sources. These feed into the BIA WEB PORTAL, which acts as a central hub for cataloged resource inventory and expert systems. The portal connects to a BIA GIS datasets and Climate GIS webservices, which then feed into a BIA Climate IT / GIS Coordinator. This coordinator manages data input, processing, and post-processed results. The results are then shared with Tribal Climate Change Managers, Leadership, Partners & Other Users. The program also includes a BIA Tribal Climate Resilience Program Landing Page, which provides access to the Tribal Climate Resilience (TCR) Program, TCR FY Grant Application / Grantees by FY & Region, BIA OTSGS TCR GIS Analysis Services, Data & Tools, DOI Science Center & BIA Regional TCR Contacts, U.S. Climate Resilience Toolkit > Tribal Nations Link, and other needed TCR links not included in CRT. A legend at the bottom indicates that blue arrows represent automatic data transfer (web service or link), while red arrows represent manual data or information sharing.

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Branch of Geospatial Services (BOGS)

FREE! ESRI GIS Licenses, Training, and Help Desk
(BIA.gov > Category: *Geospatial*)

ArcGIS Product List
The items in the ArcGIS [Product List](#) are available **at no cost** to approved applicants.
System requirements for ArcGIS for Desktop versions
Refer to [ESRI's System Requirements](#) for all versions of ArcGIS products.

How to Obtain GIS Software
New ELA members: Contact the [BOGS Help Desk](#) for the [BOGS ELA Application Form](#)
and a New Order Packet. **An ELA coordinator will help you with your application.**

BOGS Geospatial Training
The **Geospatial Training Schedule** is available. The BOGS provides GIS training to BIA
offices and employees of [Federally Recognized Tribes](#).

[BOGS Help Desk](#) 877.293.9494.


BOGS also assists Margaret in [BIA Tribal Climate Web Portal](#) development!

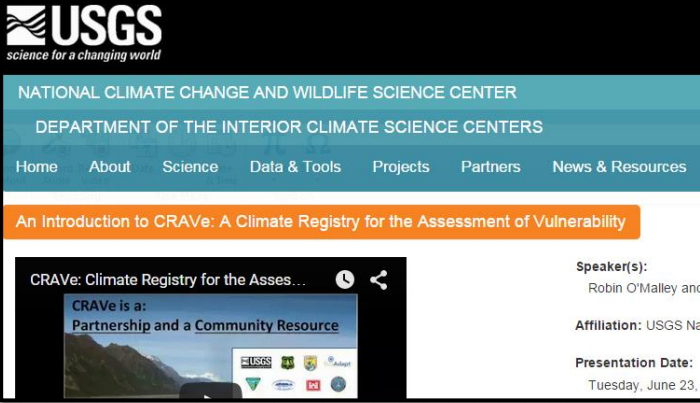
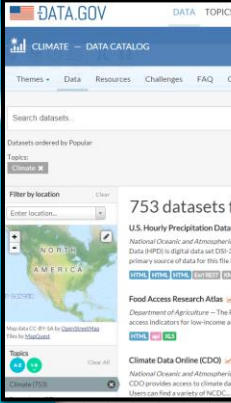


MORE SUPPORT! Bureau of Indian Affairs

TRIBAL CLIMATE RESILIENCE PROGRAM

**Margaret can provide templates, climate data, resources, tools
upon request to leverage awards and expand your support network**





**SCHEDULE IN-PERSON TODAY OR A WEBEX WITH MARGARET ON THE
SIGN-UP SHEET (OR TCRP ONLINE FEEDBACK FORM) FOR LATER**

R9 Tribal EPA Conference, SF, CA
Wednesday, 10/26/16 1PM-3:45PM

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- Select Tool
- Select Topic
- Region Links
- Agency Links
- Intertribal Links
- Climate Funding
- Photo Contest
- Liaisons
- Feedback /
Subscribe

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TRIBAL CLIMATE RESILIENCE PROGRAM

HOMEPAGE



CLIMATE CHANGE / TRIBAL CLIMATE RESILIENCE PROGRAM





The BIA Tribal Climate Resilience Program (TCRP) goal is the mainstreaming of climate considerations at the project level through leadership engagement, delivery of data and tools, training and tribal capacity building. Direct funding supports tribes, tribal consortia, and authorized tribal organizations to plan for climate resilience through competitive awards for tribally designed climate training, adaptation planning, vulnerability assessments, supplemental monitoring, capacity building, and youth engagement. The ocean and coastal management effort supports planning, science and tools, and capacity for coastal tribe's ocean management. Ocean and coastal proposals need not address only climate related concerns.

Mainstreaming climate change considerations into all Bureau of Indian Affairs (BIA) activities, and supporting federally-recognized Tribal Nations to do the same, is a high priority for the administration and the Department of the Interior (DOI). Climate change will bring new challenges to Indian Country and Alaska Native Villages. The President's Climate Action Plan identified the BIA as the lead agency to support tribes as they address this challenge.

SELECT Program Brochure Tribal Climate Resilience Resource Guide - Overview ("Tool")
TOOL: Tribal Nations Topic (Toolkit) Tribal Nations Maps (Data.gov) Awards Map

SELECT K-12 Student Photo Contest FY16 Climate Awards Quick Climate Links
TOPIC: BIA Regional Climate Liaisons Past Years Climate Awards [Subscribe / Help](#)

Fall 2016 / Spring 2017 K-12 BIA/BIE TRIBAL STUDENT CLIMATE CHANGE PHOTO CONTEST
 Past Contest Winners and 2016 Summer Photos Entries

DUE: November 30th (2016 Fall Contest) / April 25th (2017 Spring Contest)

- For K-12 Students! Tribal Climate Change Photo Contest Instructions (PDF)
- For Instructors and Mentors! Additional Contest and Climate Lesson Plans Guidelines (PDF)


Using a classroom or cell phone camera, take a picture of something you value in your tribal community that climate change might affect. Include a caption describing the climate impact (and what might be done about it). Submit all captioned photos or questions by e-mail to: bia_climate_photo_contest@bia.gov or by teacher's class instructions. Categories: K-5, 6-8, 9-12.

- 2015 Summer and Fall Tribal Student Photo Contest Award Winners (pdf)
- 2016 Spring Photo Contest Award Winners (pdf) - Includes all entries, winners marked
- 2016 Summer Photo Contest Award Winners (pdf) - Includes all entries, winners marked

CHOOSE A CATEGORY
 -- Click To Change Category --

REGIONS

Click the map to view our regions and their office contact information and the tribes served by that region



CLIMATE CHANGE BY REGION

- Regional Fact Sheets
- Tribal Fact Sheets
- BIA Regional Climate POCs
- Navajo RO Climate Page
- Pacific RO Climate Page

FEDERAL RESOURCES

- Agency Fact Sheets
- Executive Order 13653
- Climate Action Plan
- Climate Change Indicators
- National Climate Assessment
- Climate Resilience Toolkit
- Climate Data and Maps
- Climate Adaptation Strategy
- DOI Climate Science Centers
- DOI Landscape Cooperatives
- EPA Climate Change
- EPA Tribal Portal

BUREAU OF INDIAN AFFAIRS

TRIBAL CLIMATE RESILIENCE PROGRAM

ANNUAL CLIMATE FUNDING

FY 2016 Tribal Climate Resilience Program Awards
Adaptation & Ocean/Coastal Planning, Travel Support, Youth Funding, and Capacity Building

- FY16 BIA TCRP Awards Summary (pdf)
- Indian Affairs FY16 BIA TCRP Awards Press Release (pdf)

Awards Announced 8/24/16: The Bureau of Indian Affairs announced funding of more than \$8.6M to federally-recognized Tribes and Alaska Native communities for tribal climate change adaptation and capacity building, ocean and coastal management planning, and youth climate opportunities. Awarded no-award letters were sent to tribal leaders with an email copy to original submitters in early August 2016. For an awards listing, please see the [FY16 BIA TCRP Awards Summary](#).

If you have questions or feedback about the proposal or review process, please submit it by email to climate.funding@bia.gov.

ORIGINAL FY16 SOLICITATION RESOURCES (Archive)

- FY16 Application Kit (pdf) - Notice of Funding (proposal requirements)
- [Optional] Proposal Cover Sheet (fillable pdf) - to aid in correct filing
- Original FY16 Funding Announcement Letter sent to Tribal Leaders (pdf)
- Indian Affairs Climate Funding News Release posted 3/23/16 (pdf)
- BIA Regional Climate Contacts (pdf)
- Overview Webinar with Q&A (YouTube) - Download slides (pdf)

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TRIBAL CLIMATE RESILIENCE PROGRAM

Current FY Climate Funding – Review last year’s kit to prepare to apply! See past awards

FY 2016 Tribal Climate Resilience Program Awards
Adaptation & Ocean/Coastal Planning, Travel Support, Youth Funding, and Capacity Building


- FY16 BIA TCRP Awards Summary (pdf)
- Indian Affairs *FY16 BIA TCRP Awards* Press Release (pdf)

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ORIGINAL FY16 SOLICITATION RESOURCES (Archive)

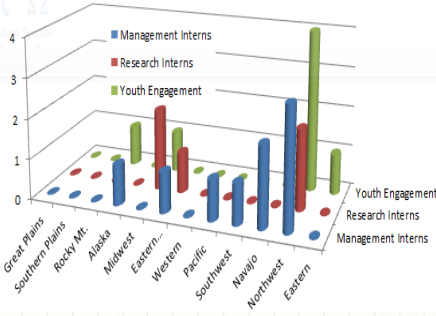
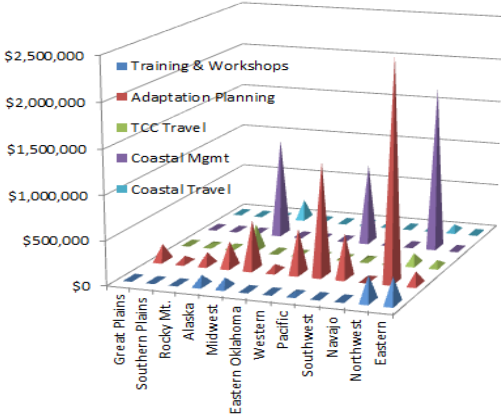
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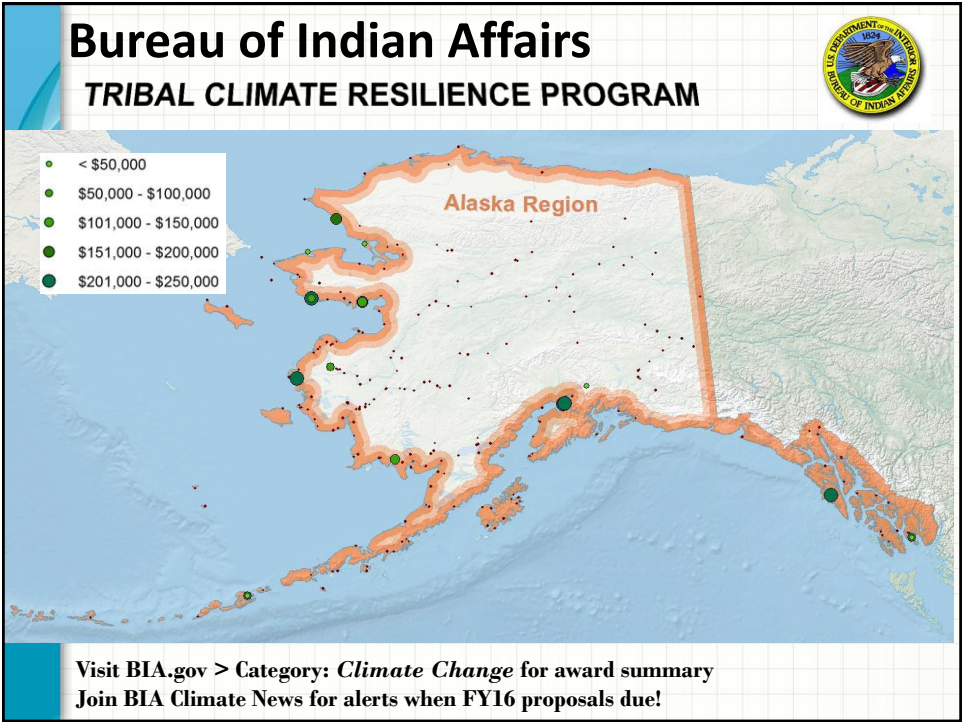
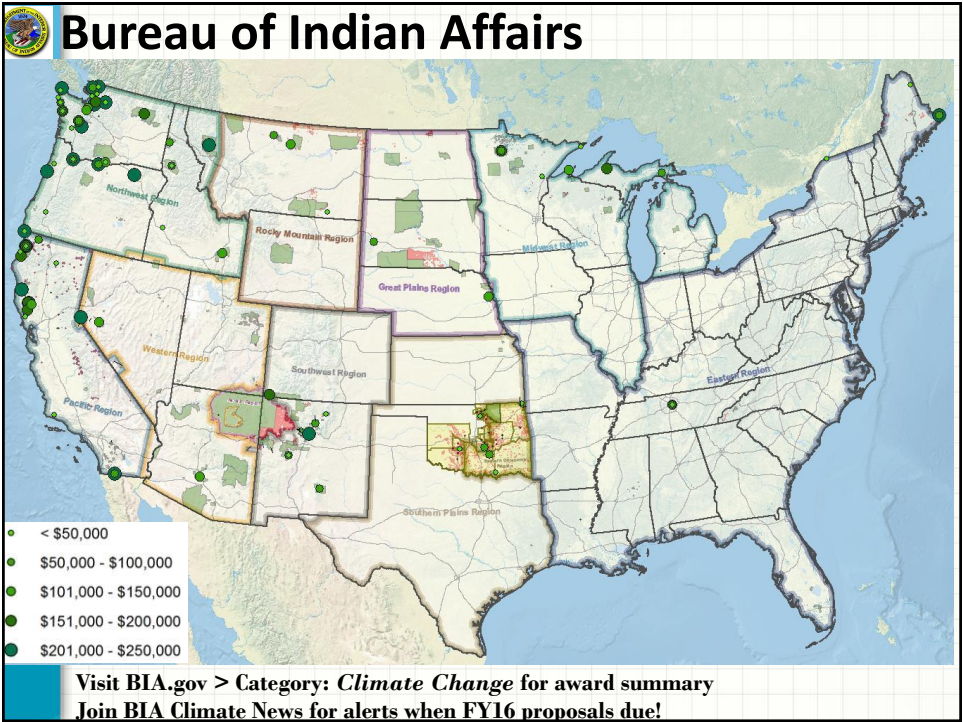
TRIBAL CLIMATE RESILIENCE PROGRAM

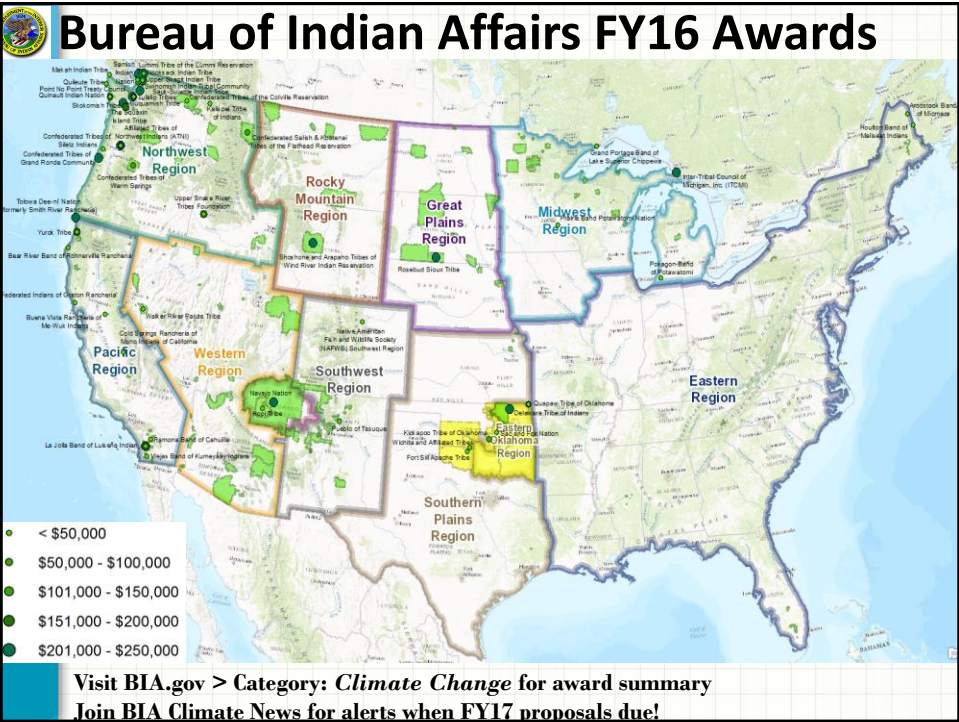
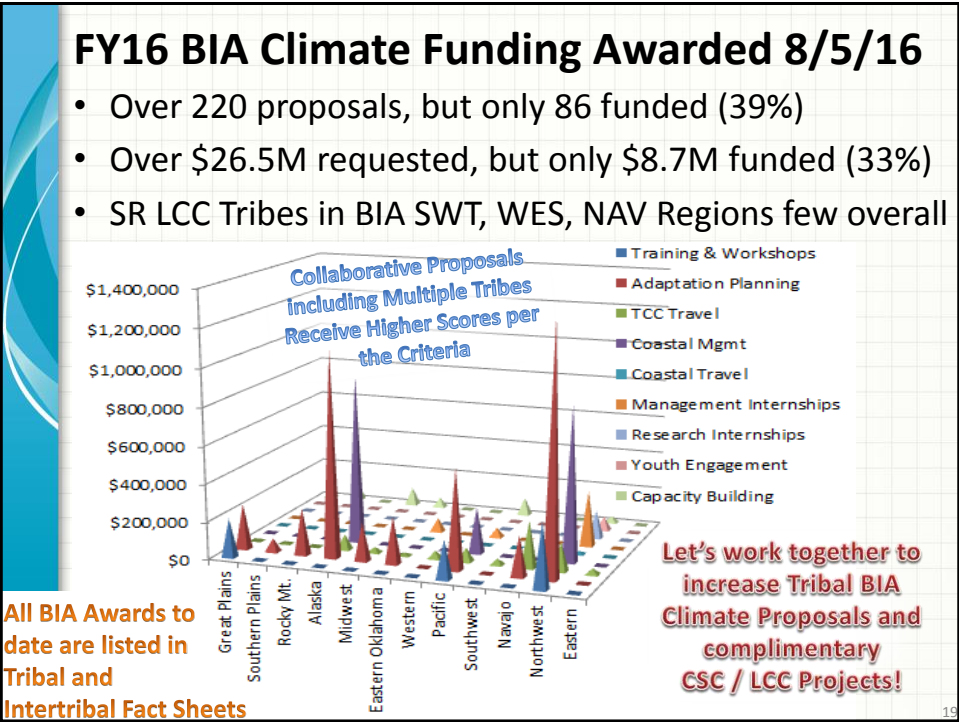
In June 2015, BIA Climate Program awarded nearly \$12M!
Over \$1M for interns/youth were awarded in August 2015!

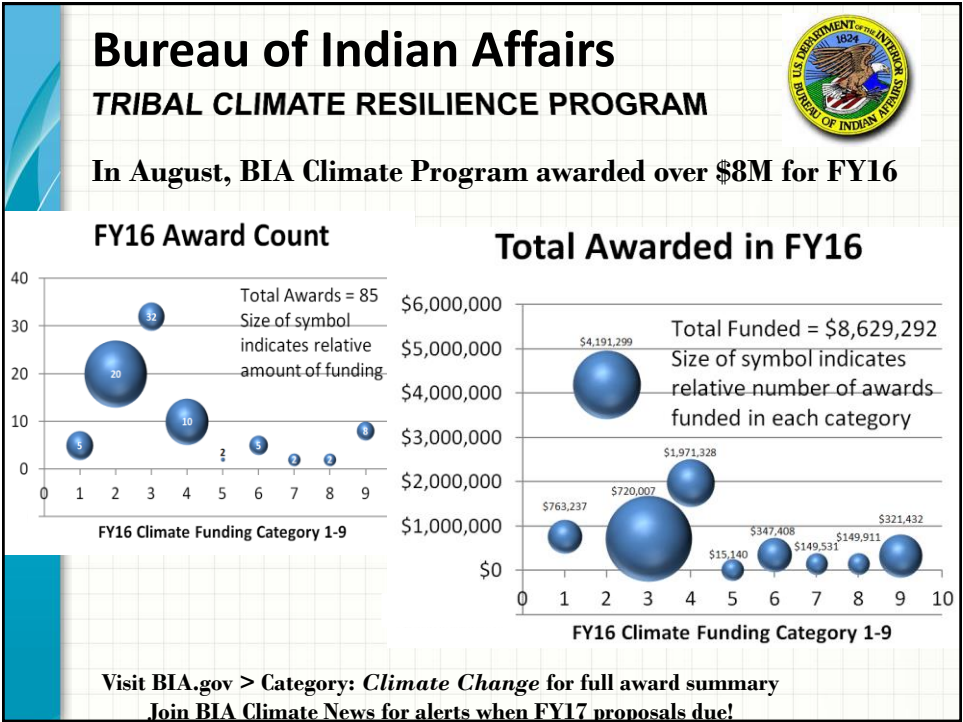
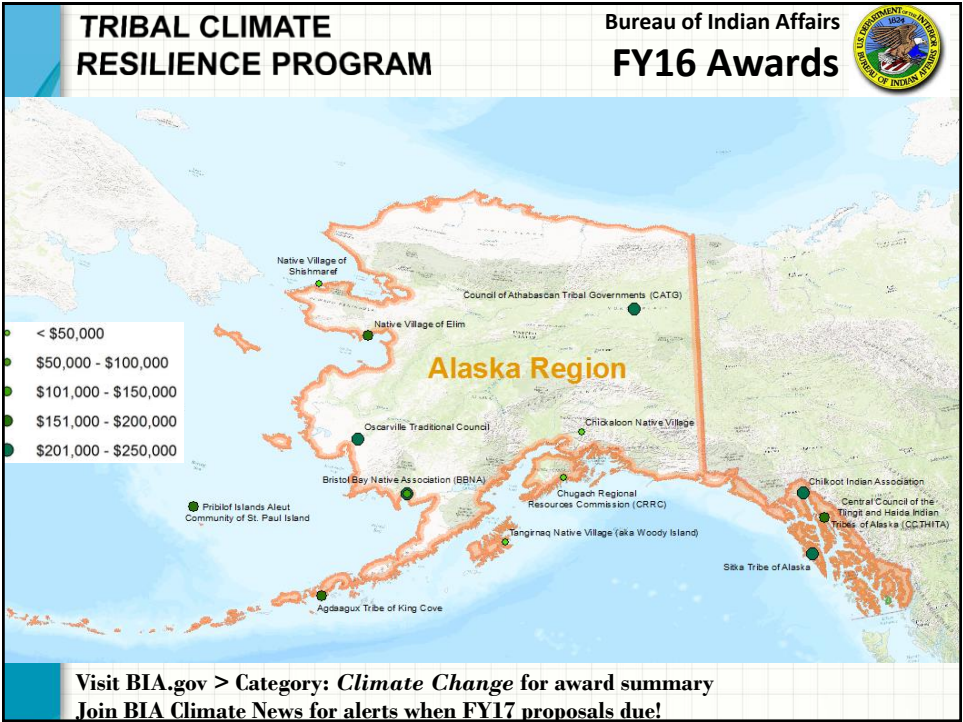


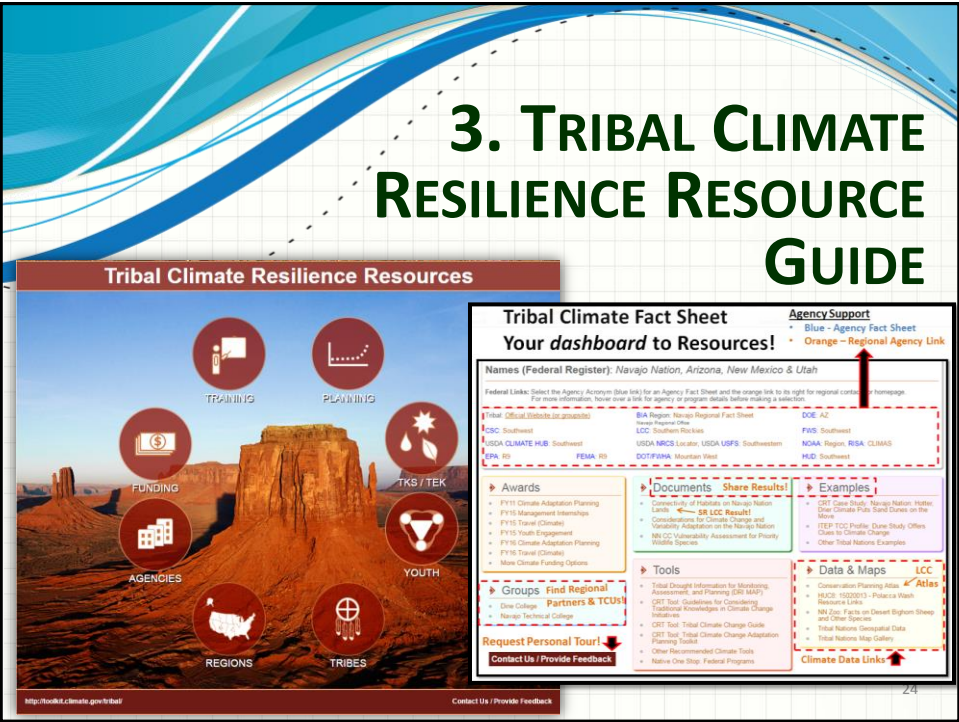
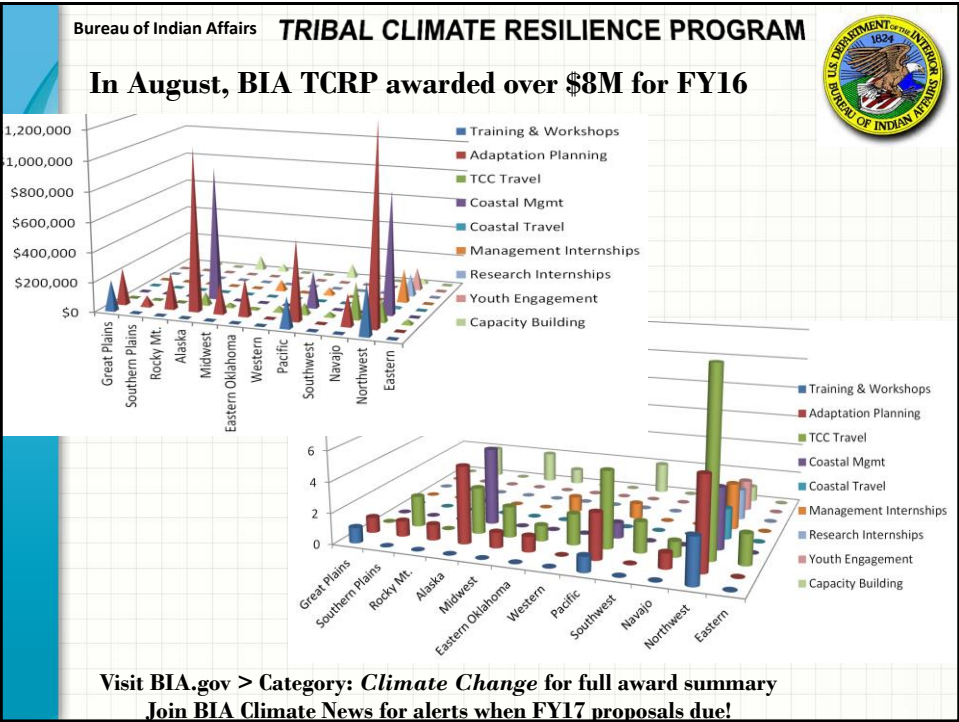
Visit BIA.gov > Category: *Climate Change* for full award summary
Join *BIA Climate News* for alerts when **FY16 proposals due!**











<http://www.data.gov/climate/tribal-nations>



**TRIBAL NATIONS
IN AGENCY-WIDE
FEDERAL SYSTEMS
LINKED TOGETHER
THROUGH THE TCR RG**



<http://www.data.gov/climate/tribal-nations>



<http://toolkit.climate.gov/topics/tribal-nations>

<http://toolkit.climate.gov/tribal>

Start at the TCR Resource Guide (Landing Page)


<http://toolkit.climate.gov/tribal>



From the [Tribal Climate Resilience Resource Guide Landing Page](#), select one of the eight topics (circles) to explore resources. Choose [Agencies](#), [Regions](#), or [Tribes](#) to visit specific listings or choose a topical webpage: [Youth](#), [Funding](#), [Training](#), [Planning](#), or [Traditional Knowledges \(TKs\) / Traditional Ecological Knowledge \(TEK\)](#).

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Find Your Tribal Fact Sheet

1) Choose TRIBES icon

2) Jump to Tribe by entering 3-4 distinct letters from Tribe Name in Quick Filter

Tribal Climate Change Resources

Tribes

TCUs

Intertribal Groups

Tribes

Show 100 entries

| Tribes | BIA Region | State | Fact Sheet |
|--|----------------|-------|------------|
| Paiute Indian Tribe of Utah (Cedar, Kanosh, Koosharem, Indian Peaks, & Shivwits) | Western Region | Utah | Fact Sheet |

Showing 1 to 1 of 1 entries (filtered from 577 total entries)

Previous1Next

3) Choose Tribal Fact Sheet of Interest

Names (Federal Register): Paiute Indian Tribe of Utah (Cedar Band of Paiutes, Kanosh Band of Paiutes, Koosharem Band of Paiutes, Indian Peaks Band of Paiutes, and Shivwits Band of Paiutes)

Federal Links: Select the Agency Acronym (blue link) for an Agency Fact Sheet and the orange link to its right for regional contacts or homepage. For more information, hover over a link for agency or program details before making a selection.

| | | |
|---|---|---------------------------------------|
| Tribal: Official Website (or groupsite) | BIA Region: Western Regional Fact Sheet | DOE: UT |
| CSC: Southwest | LCC: Southern Rockies | FWS: Mountain Prairie |

Tribal Climate Fact Sheet

Your dashboard to Resources!

Agency Support

- Blue - Agency Fact Sheet
- Orange – Regional Agency Link

Names (Federal Register): Navajo Nation, Arizona, New Mexico & Utah

Federal Links: Select the Agency Acronym (blue link) for an Agency Fact Sheet and the orange link to its right for regional contacts or homepage. For more information, hover over a link for agency or program details before making a selection.

| | | |
|---|--|---|
| Tribal: Official Website (or groupsite) | BIA Region: Navajo Regional Fact Sheet | DOE: AZ |
| CSC: Southwest | LCC: Southern Rockies | FWS: Southwest |
| USDA CLIMATE HUB: Southwest | USDA NRCS: Locator , USDA USFS: Southwestern | NOAA: Region , RISA: CLIMAS |
| EPA: R9 | FEMA: R9 | DOT/FWHA: Mountain West |
| | | HUD: Southwest |

Awards

- FY11 Climate Adaptation Planning
- FY15 Management Internships
- FY15 Travel (Climate)
- FY15 Youth Engagement
- FY16 Climate Adaptation Planning
- FY16 Travel (Climate)
- More Climate Funding Options

Groups Find Regional Partners & TCUs!

- Dine College
- Navajo Technical College

Request Personal Tour!

[Contact Us / Provide Feedback](#)

Documents Share Results!

- Connectivity of Habitats on Navajo Nation Lands
- SR LCC Result!
- Considerations for Climate Change and Variability Adaptation on the Navajo Nation
- NN CC Vulnerability Assessment for Priority Wildlife Species

Tools

- Tribal Drought Information for Monitoring, Assessment, and Planning (DRI MAP)
- CRT Tool: Guidelines for Considering Traditional Knowledges in Climate Change Initiatives
- CRT Tool: Tribal Climate Change Guide
- CRT Tool: Tribal Climate Change Adaptation Planning Toolkit
- Other Recommended Climate Tools
- Native One Stop: Federal Programs

Examples

- CRT Case Study: Navajo Nation: Hotter, Drier Climate Puts Sand Dunes on the Move
- ITEP TCC Profile: Dune Study Offers Clues to Climate Change
- Other Tribal Nations Examples

Data & Maps LCC Atlas

- Conservation Planning Atlas
- HUC8: 15020013 - Polacca Wash Resource Links
- NN Zoo: Facts on Desert Bighorn Sheep and Other Species
- Tribal Nations Geospatial Data
- Tribal Nations Map Gallery

Climate Data Links

Great overview of a variety of Tribes & Climate resources from each Agency Selected to Explore!

Choose the [Agencies Icon](#) on the TCR RG Landing page to get to *Quick Links* that provide a few primary *Tribes & Climate* items, and its [Full Fact Sheet](#) for more details.

Tribal Climate Resilience Resources - AGENCY CLIMATE RESOURCES
National Oceanic and Atmospheric Administration (NOAA) FACT SHEET

NOAA works with a variety of Tribal Nations and Organizations on a diverse array of marine and coastal concerns. Regional Centers also provide climate trends and weather forecasts nationwide.

- o AASC Climate Service Catalog (Partner)
- o Climate At National Weather Service (NWS)
- o National Integrated Drought Information System (NIDIS)
- o NOAA Climate Gov Dashboard, News, Maps, Support
- o NOAA Fisheries Tribal Consultation In Alaska
- o NOAA Regional Climate Centers
- o NOAA Regional Integrated Science And Assessment Programs (RISAS)
- o Tribal Relations News And Links (Inter-Agency)

- Alaska ACCAP Select Projects (OA, SNA, Coastal Change, More...)
- CAN-VN Decision Support Tools (ArkStorm, Drought, Downsizing, Data Archive, GB Dashboard)
- Climate Assessment For The Southwest Phase II Report
- Climate Information (NCEI)
- El Niño & La Niña (ENSO)
- National Drought Overview (NCEI)
- Poster! 10 Signs Of A Warming World
- Socioeconomics And Climate Change In The Great Lakes Region
- Tribal Resource Guide To U.S. Dept. Of Commerce (Partner)
- Western Water Assessment Decision Support Tools (Climate Dashboard, CRAG, etc.)

- 2016 NOAA Climate Program Office Funding
- NOAA And Other Grants (Federal-Wide Options)
- NOAA Coastal Funding Opportunities
- NOAA Sea Grant Programs (Zoom Out For Alaska)
- NOAA Species Recovery Grants To Tribes
- TCCG - Possible NOAA Funding Opportunities

- Climate Data Access (NCEI)
- CRT Partner On: NSIDC Atlas Of The Cryosphere
- CRT Tool Partner For: Atlas of Community-Based Monitoring And Traditional Knowledge In A Changing World
- CRT Tool Partner For: Climate-Smart Conservation: Putting Adaptation Principles Into Practice
- CRT Tool Partner For: G-WOW Guiding For Tomorrow: Changing Climate, Changing Culture
- CRT Tool Partner For: Ocean Acidification Curatorial Collection
- CRT Tool Partner For: U.S. Drought Portal
- Lead On: Synthesis Of Arctic Research (SOAR)
- Partner On: Community Collaborative Rain, Hail And Snow Network (CoCoRaHS)
- Partner On: Rutgers Global Snow Lab
- U.S. Climate At A Glance (NCEI)
- U.S. Climate Resilience Toolkit (Tribal Nations)

- o [Inter-Tribal Youth Climate Leadership Congress](#)
- o [NCAR GLOBE Education Programs \(Partner\)](#)
- o [Next Generation Climate Curriculum](#)
- o [NOAA West Tribal Portal Staff Training Links](#)
- o [NWS Climate Services Seminar Series](#)
- o [SCIPP SPL Youtube Video Training Archive](#)
- o [Subscribe! NOAA Climate Stewards Webinars Alerts](#)
- o [Teaching Climate](#)

- o CRT Partner On: Alaskan Tribes Join Together To Monitor Harmful Algal Blooms
- o CRT Partner On: Assessing The Timing And Extent Of Coastal Change In Western Alaska
- o CRT Partner On: Jamestown S'Klallam Tribe Plans For Change On The Olympic Peninsula
- o CRT Partner On: Looking To The Future On Alaska's North Slope
- o CRT Partner On: Preparing To Respond To Oil Spills In The Arctic
- o CRT Partner On: Sugamish, Ocean Acidification Curriculum Collection
- o SOAR Lead On: Alaska Fisheries And Communities At Risk From Ocean Acidification

Each Agency Fact Sheet lists Resources and [Tools & Cases](#) from CRT [Tribal Nations](#) that the Agency developed with Tribes, as well as Funding, Training, Services, and Products that support *either* TRIBES and/or CLIMATE in a *consistent layout* in one unified source.

Tribal Climate Resilience Resources - AGENCY CLIMATE RESOURCES
Environmental Protection Agency (EPA) FACT SHEET

EPA provides Consultation and Coordination with Tribes and Tribal Groups throughout all its Environmental Programs to protect air, water, and Tribal lands, and to prevent chemical and solid wastes from polluting the environment.

- o All Tribal Programs + Regional Contacts
- o Consultation And Coordination
- o Protecting And Preserving Tribal Lands
- o Safe Drinking Water On Tribal Lands
- o Tribal Air & Climate Resources
- o Tribal Climate And Energy Information
- o Tribal Science Council

- o Clean Power Plan
- o Climate Change Indicators In The United States
- o Climate Ready Estuaries & Coastal Adaptation
- o EPA Climate Adaptation Planning
- o Impacts And Adaptation By Region
- o Laws, Regulations, And Compliance Governing AIAN Sectors
- o Resources For Climate Change Research

- Drinking Water Infrastructure Set Aside Program
- General Assistance Program
- Tribal Air Grants Framework
- Tribal EcoAmbassadors
- Tribal Funding By Topic
- Tribal Nonpoint Source Grants (CWA Section 319)
- Tribal Water Pollution Control Grants (CWA Section 106)
- Wastewater Infrastructure Set Aside Program
- Wetland Program Development Grants

- Adaptation Resource Center (ARC-X)
- Climate Change and Water Tools
- CREAT Climate Scenarios Projection Map
- CRT Tool Partner For: Climate-Smart Conservation Guide
- CRT Tool Partner For: Indigenous Health Indicators Tool
- CRT Tool Partner For: Local Environmental Observer (LEO) Network
- CRT Tool Partner For: Ocean Acidification Curriculum Collection
- CRT Tool Partner For: Tribal Climate Change Guide
- CRT Tool: Tribal FERTS - Environmental Risk Management
- CRT Tool: Climate Resilience Evaluation & Awareness Tool (CREAT)
- CRT Tool: Risk-Based Adaptation Planning Workbook
- Green Building Tools For Tribes
- Greenhouse Gas Reduction Calculator

- o Air Quality Training
- o Climate Events
- o Grant Application Process
- o Solid Waste Tribal Ed And Assistance
- o Understanding Climate Change Impacts On Water Resources

- Climate Showcase Communities Program
- CRT Partner On: Addressing Links Between Climate And Public Health In Alaska Native Villages
- CRT Partner On: Alaskan Tribes Join Together To Monitor Harmful Algal Blooms
- CRT Partner On: Ifupiaq Work To Preserve Food And Traditions On Alaska's North Slope
- CRT Partner On: Jamestown S'Klallam Tribe Plans For Change On The Olympic Peninsula
- CRT Partner On: Relocating Kivalina
- CRT Partner On: Sugamish Ocean Acidification Curriculum Collection
- CRT Partner On: The Swinomish Indian Tribal Community Prepares For Climate Change Impacts
- CRT Partner On: Yukon Delta Delays Document Baseline Environmental Data For Wetlands
- Support For: Tribal Spotlight - Indoor Air Quality Trainings

EPA funding by mission area, new ARC-X Adaptation Resource Center and Examples of Continual, Expanding work with Tribes


New Tools for addressing W/WW infrastructure and other climate concern with CREAT Tool

EPA New! ArcGIS Story Maps for CREAT


Climate Scenarios Projection Map


Storm Surge Inundation Map

Water Utility Climate Resilience Support Projects



CLIMATE READY
WATER UTILITIES
EPA

 Climate Resilience Evaluation and Awareness Tool (CREAT) Exercises

 CREAT Training Events

TCR Resource Guide Listing Pages – 2. [Regions](#)



Tribal Climate Resilience Resources
BIA Regions

Alaska Region | Eastern Region | Eastern Oklahoma Region | Great Plains Region | Midwest Region | Navajo Region
Northwest Region | Rocky Mountain Region | Pacific Region | Southern Plains Region | Southwest Region | Western Region

About

Contact Us / Provide Feedback

To provide more site-specific information, resources are also organized by BIA region, since each Tribe in the U.S. is associated with a BIA service area. Select the region for your tribe to access federal-wide support for that area of interest.

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
BIA Tribal Climate Resilience Program (Sealaska MBS Contractor, Denver, CO)
Margaret.Herzog@bia.gov, (720) 484-3353, work cell (720) 630-3817

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Jump to BIA Region Fact Sheet – PAC Example

BIA Region: Pacific Regional Fact Sheet

Pacific Regional Office

Tribal Climate Resilience Resources - REGIONAL CLIMATE RESOURCES

PACIFIC REGION (PAC RO) FACT SHEET

Description of Region: The BIA Pacific Regional Office is committed to supporting the 104 federally recognized Tribes in California within its jurisdiction to address new challenges presented by the current rate of global climate change. The diverse missions of all branches of the BIA that have joined together to address climate change are the strength of the Pacific Region strategy. In addition to resources presented here, the Region will utilize its network of partners and tribal contacts to disseminate climate change information to Tribes within the Region.

Federal Links: Select the Agency Acronym for the full Agency Fact Sheet and the link to its right for a more specific regional contact or homepage. Choose *Affiliated Tribal Fact Sheets* to access a Fact Sheet for each Tribe in this Region.

BIA Pacific - Affiliated Tribal Fact Sheets

DOI/FWS: Western
BLM: CA
FEMA: R9
USDA NRCS:Locator, USDA USFS: Pacific Southwest
LCC(s): California Desert North Pacific

DOE: CA
FWS: Pacific Southwest
HUD: Southwest
NOAA: Region, RISA: CNAP

Services

- CA Indian Legal Services
- CA State Climate Change Adaptation
- CA State Tribal Advisor By Dept.
- CA Tribal Temp. Asst. For Needy Families
- Tribal Climate Resilience Program (BIA)
- Tribal Government Climate Support (EPA)
- NIDIS Tribal Engagement (Drought Portal)
- Native One Stop Resource Finder

Funding

- Tribal Funding By Strategy
- Other Funding Opportunities (TCCG) - Choose Geography: SW And Any

Tools

- Cal-Adapt Climate Tools And Data Access
- California LCC Climate Commons
- Central And N. CA Ocean Observing System
- NOAA: Western Regional Climate Center Analysis
- CRT Tool: Guidelines For Considering Traditional Knowledge In Climate Change Initiatives
- CRT Tool: Tribal Climate Change Guide (TCCG)

Training

- 2016 CA Adaptation Forum
- Tribal Climate Adaptation Workshop
- Tribal Climate Change Adaptation Planning

Examples

- CRT Story: The Blue Lake Rancheria Tribe Undertakes Innovative Action To Reduce The Causes Of Climate Change
- Nationwide Tribal Climate Case Studies

Regional Groups

- CA LCC Tribal Team
- Inter-Tribal Council Of California (ITCC)
- NNCAP SW Tribal CC Network

Products

- CA Adaptation Planning Guide (2012)
- CA Invasive Plant Council Herbicide BMPs
- EPA: Climate Impacts In The Southwest
- NCA Regions: Southwest Climate Assessment
- Traditional Ecological Knowledge (TEK) Resources
- Tribal Nations Theme In Climate Data Initiative

Select Pacific- area Federal Resources or access area Tribal Fact Sheets to compare

Contact Us / Provide Feedback

Expanded! Tribal Climate Change Resource Guide

<http://tribalclimateguide.uoregon.edu/> or CRT TOOL!

UNIVERSITY OF OREGON

Tribal Climate Change Guide

The Tribal Climate Change Guide is part of the Pacific Climate Change Guide, launched in November 2015 and is a beta version of our new online guide.

Funding

Adaptation Plans

Climate Programs

Climate Jobs

Events

Funding

The Tribal Climate Change Funding Guide is intended to provide up-to-date information on grants, programs and plans that may assist tribes questions or updates for this guide, email: kathy@uoregon.edu.

Search by Keyword

Geography

- Any -

Apply

Reset

| Title | Organization | Grant Deadline | Description |
|--|--|----------------|---|
| NOAA 2016 Coral Reef Conservation Program International Coral Reef Conservation Cooperative Agreements | NOAA (National Oceanic and Atmospheric Administration) | 11/19/2015 | The NOAA Coral Reef Conservation Program (CRCP) provides matching grants for international solicits proposals that will support the NOAA Coral Reef Conservation Program's International Strategy. The International Strategy focuses on supporting existing regional efforts in four priority regions: reef ecosystems and existing initiatives and partnerships. Two of these four priority regions will Opportunity: the Wider Caribbean and Micronesia...In FY 2016, the CRCP will accept applications for two-year project period focused on building international capacity for the effective ecosystem-b |

Access the TCCG from ANY Tribal Fact Sheet Funding or Tool section!

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
BIA Tribal Climate Resilience Program (Sealaska MBS Contractor, Denver, CO)
Margaret.Herzog@bia.gov, (720) 484-3353, work cell (720) 630-3817

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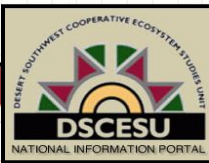
Tribal College Fact Sheets - SIPI

Southwestern Indian Polytechnic Institute

Tribal College or University: *Southwestern Indian Polytechnic Institute*

TCU: Website AIHEC: TCU Profile Related Programs Technical Ed Youth: More Resources

CESU: DESERT SOUTHWEST



Awards

Affiliated Tribes

- Pueblo of Nambe
- Pueblo of Tesuque
- Kewa Pueblo
- Pueblo of Acoma
- Pueblo of Cochiti
- Pueblo of Isleta
- Pueblo of Jemez
- Pueblo of Laguna
- Pueblo of Zia
- Pueblo of Picuris
- Pueblo of Pojoaque
- Pueblo of Taos
- Pueblo of San Felipe
- Pueblo of San Ildefonso
- Pueblo of Sandia
- Pueblo of Santa Ana
- Pueblo of Santa Clara

Jump from TCU Fact Sheet to area Tribes Fact Sheets and back!

Documents

Tools

Examples

- Monitoring Change: SIPI students engage in long-term ecological research
- Climate Change Working Group Meets at SIPI

Tribal Climate Resilience Resources Youth and Climate

Orientation

Tribal Youth are increasingly impacted as their families and communities attempt to sustain tribal lifeways in the face of climate disruptions. Climate change curriculum, educational groups, internships, and programs may help Tribal Youth gain a sense of empowerment to address climate challenges.

Tribal Youth, Education, and Climate Groups

- Bureau of Indian Affairs Tribal Climate Resilience Program
- Bureau of Indian Education

Tribal Student Climate and STEM Career Funding

- NASA Tribal College and University ELIO Program Internships

Tribal Climate Curriculum

- Guidelines for Considering Traditional Knowledge in Climate Change Initiatives
- National Climate Assessment, C.12

TCU pages include the website, AIHEC listing with contacts, link to **Youth Resources Page**, Tribes, Link to 1 or more CESU to join for discounts & support

Intertribal Fact Sheets: Examples – BBNA & GLIFWC

Group Name: *Bristol Bay Native Association*

Type: Tribal Group Region: Alaska Group: Website Additional Focus: Website Details

Description: Alaska Native Association or Nonprofit formed when ANSCA Native Corporation was provided to provide government services for community health and well being. Bristol Bay Native Association, Inc. is a Tribal Consortium, made up of 31 Tribes and is organized as a non-profit corporation to provide a variety of educational, social, economic and related services to the Native people of the Bristol Bay region of Alaska. The Mission of BBNA is to maintain and promote a strong regional organization supported by the Tribes of Bristol Bay to serve as a unified voice to provide social, economic, cultural, educational opportunities and initiatives to benefit the Tribes and the Native people of Bristol Bay in SW Alaska. BBNA's Natural Resource Programs protect the rights of Bristol Bay villages to choose how to continue to meet their subsistence, cultural, and economic needs. Consistent with solid stewardship, sustainability and self-reliance, the program helps advance our village's natural resource management goals.

Awards

- Ocean and Coastal Management Planning for Practical Methods for Bristol Bay Villages to Document and Plan for Climate Change

Affiliated Tribes

- Koliganek (New Koliganek Village Council)
- Perryville (Native Village)

Documents

- BBNA Implementation Strategy, Recovery, and other regional energy plans

Tools

Examples

- Partner on: Assessing the Timing and Extent of Coastal Change in Western Alaska

Data & Maps

Intertribal Climate Resilience Fact Sheet Great Lakes Indian F&W Commission

Group Name: *Great Lakes Indian F&W Commission*

Type: Tribal Group Region: Great Lakes Group: Website Additional Focus: Website Details

Description: The Great Lakes Indian Fish & Wildlife Commission is commonly known by its acronym, GLIFWC. Formed in 1984, GLIFWC represents eleven Ojibwe tribes in Minnesota, Wisconsin, and Michigan who reserved hunting, fishing and gathering rights in the 1837, 1842, and 1854 Treaties with the United States government. GLIFWC provides natural resource management expertise, conservation enforcement, legal and policy analysis, and public information services in support of the exercise of treaty rights during well-regulated, off reservation seasons throughout the treaty ceded territories. GLIFWC is guided by its Board of Commissioners along with two standing committees, the Voigt Intertribal Task Force and the Great Lakes Fisheries Committee, which advise the Board on policy.

Awards

Affiliated Tribes

Documents

- ERT Tool: G-WOW Guiding for Tomorrow: Changing Climate, Changing Culture

Tools

Examples


Data & Maps

- GLIFWC Map of Ceded Tribal Territories

Intertribal Groups include Sections for Member Tribes - with links back to their Fact Sheets! + Tools, Data & Maps, Awards, Examples, and Climate Documents

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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Traditional Knowledges / Traditional Ecological Knowledge Integration

Tribal Climate Resilience Resources Traditional Knowledges / Traditional Ecological Knowledge

Guidelines for Considering Traditional Knowledges in Climate Change Initiatives

Change Initiatives will help protect knowledge and holders of TKs

Indigenous traditional knowledges (TKs) have emerged in national and international arenas as rich information for indigenous and non-indigenous climate assessments, policies, and adaptation strategies. With this growing recognition, however, comes potential risks to indigenous peoples in sharing TKs in federal and other non-indigenous climate change initiatives. These resources assist Tribes, Agencies, and other Partners build respectful, complimentary efforts together.

Guidance

- Tribal Nations Summary and References
- Guidelines for TK, Primer, Ethics Essay in Toolkit**
- NP-NH Climate Change Workshop II Report
- First Stewards 2012 Witness Report
- Rising Voices Reports and Outcomes
- AIAN Guide to Build Cultural Awareness

Research Papers

- CMN SDI Model
- Best of 2 Worlds: TEK in ESB Management
- CC and Indigenous Peoples in the U.S.
- Guarding Against Exploitation: TEK & CC
- Engagement that Honors TKs
- TCCG Publications
- IPCC Portal Publications - Books

Federal TEK Awareness

- ACCNCRS TK Guidelines and Primer - Summaries
- CC Through an Intersectional Lens
- USFS Exploring Role of TEK in CC Initiatives
- USFS Briding the Gaps that Divide
- US FWS Basic TEK Info
- NIH TEK and Its Value for EHS
- NIH TEK Workshop Day 2
- EPA Using TEK to Adapt to CC
- EPA TSC: TEK in Policy and Decision Making
- NOAA TEK and CC Impacts
- NPS Integrating TEK into NRM
- Tribal Engagement in CSCs and

Examples

- CMN SDI Model to Inform Climate Initiatives

Videos

- Brads of Truth, Part Two: Climate Change
- ITEP: Adapting to Change

When working with Tribal Nations, federal and academic projects and partners are often enriched by the deeply integrated understanding of the relationships among all living things that indigenous people have honed since time immemorial. This may lead to breakthroughs in adaptation through keen natural observations, unique perceptions, and a focus on harmonious ways. Learn more with [TKs/TEK](#) links!

TCR Resource Guide: Youth Resources

Tribal Climate Resilience Resources Youth and Climate

Orientation

Tribal Youth are increasingly impacted as their families and communities attempt to sustain tribal lifeways in the face of climate disruptions. Climate change curriculum, educational groups, internships, and programs may help Tribal Youth gain a sense of empowerment to address climate challenges.

Tribal Youth, Education, and Climate Groups

- Bureau of Indian Affairs Tribal Climate Resilience Program
- Bureau of Indian Education Schools
- American Indian Higher Education Consortium (AIHEC)
- American Indian Association of Engineering and Science (AISES)
- National Indian Education Association (NIEA)

Tribal Student Climate and STEM Career Funding

- NASA Tribal College and University ELO Program Internships
- CMN SDI Indigenous Planning Summer Institute
- NAU ITEP Environmental Education Outreach Program
- American Indian College Fund Internships, Fellowships, Scholarships, and Opportunities

Tribal Climate Curriculum

- Guidelines for Considering Traditional Knowledges in Climate Change Initiatives
- National Climate Assessment, C.12. Indigenous Peoples, Lands, and Resources
- Tribal Nations (and Arctic) in the U.S. Climate Resilience Toolkit tools, cases in six strategies
- G-wow Guiding for Tomorrow (Great Lakes)

Youth Topics include Groups, Funding, Climate Curriculum, Climate Programs, Examples, Research Tools, College-Ready,

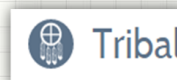


Getting the Most out of the *Tribal Climate Resilience Resource Guide*

- Tribal Liaisons can visit a [Region](#) or [Tribal Fact Sheet](#) with a Tribe or Intertribal Group to discuss resources and option for considering climate
- A Tribe can visit each [Agency Fact Sheet](#) to gain better understanding of the full breadth of federal support
- College faculty and advisors can review the [Youth page](#) with students interested in [STEM fields](#) & climate change
- Academic and non-profit partners should carefully review the [Traditional Knowledges \(TKs\)](#) section to ensure respectful, well-integrate climate projects and policies that protect knowledge and knowledge-holders

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ACCESSING TRIBAL NATIONS TOOLKIT AND CLIMATE DATA FROM THE TRIBAL CLIMATE RESILIENCE RESOURCE GUIDE



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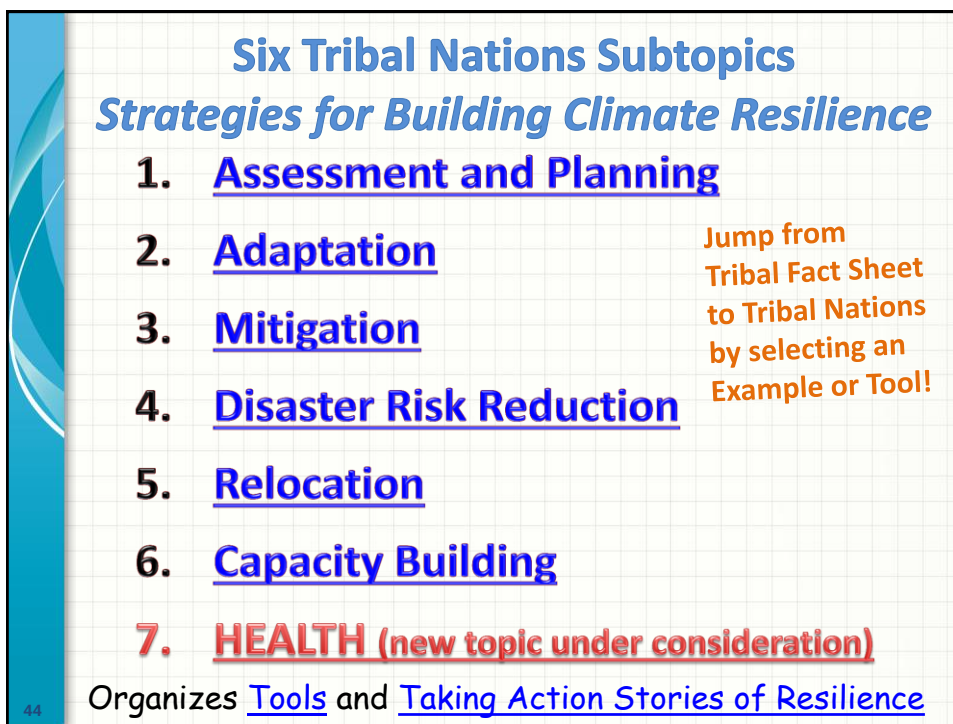


Jump from Tribal Fact Sheet to Tribal Nations by selecting an Example or Tool!

**TRIBAL NATIONS & ARCTIC TOPICS
IN THE U.S. CLIMATE RESILIENCE TOOLKIT**

<http://toolkit.climate.gov/topics/tribal-nations>
<http://toolkit.climate.gov/topics/arctic>

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**Six Tribal Nations Subtopics
Strategies for Building Climate Resilience**

1. [Assessment and Planning](#)
2. [Adaptation](#)
3. [Mitigation](#)
4. [Disaster Risk Reduction](#)
5. [Relocation](#)
6. [Capacity Building](#)
7. [HEALTH \(new topic under consideration\)](#)

Jump from Tribal Fact Sheet to Tribal Nations by selecting an Example or Tool!

Organizes [Tools](#) and [Taking Action Stories of Resilience](#)

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Tribal Nations Taking Action Cases

Taking Action

Clear Filters


Filter by climate threat/stressor: ▼

Filter by parent topic: ▼

Filter by steps to resilience: ▼

Filter by region: ▼


Communities and businesses are taking action to reduce their vulnerability to climate-related impacts and to build resilience to extreme events. The stories below illustrate the application of the process and tools featured in this Toolkit. Browse the stories, or filter by topic, step to resilience, and/or region in the boxes above. To expand your results, click the Clear Filters link.



Yukon Delta Villages Document Baseline Environmental Data

Students and community residents of four remote Alaskan villages measure environmental data to identify their climate vulnerabilities.


[Read more >](#)



Looking to the Future on Alaska's North Slope

As ice retreats and energy resources along Alaska's North Slope become more accessible, diverse stakeholders consider potential futures and develop a science-informed view of the implications of development in the region.


[Read more >](#)



Quinault Indian Nation Plans for Village Relocation

As the threats of tsunami and sea level rise are joined by real and potential climate impacts, the Quinault community looks to move the lower village of Taholah to higher ground.


[Read more >](#)




Relocating Kivalina

Rising seas and coastal erosion are eating away at the barrier island on which the Alaska Native Village of Kivalina rests. Residents and others are making concerted efforts to move the community to safety.


[Read more >](#)




Navajo Nation- Hotter, Drier



Preparing to Respond to Oil



Squamish Build Resilience



Confederated Salish and

Case Studies of Resilience in Action!

Nationwide, any Tribe or Tribal Group can share to encourage others!!

Tribal Nations Cases –Sidebar Links

Steps to Resilience:

✓ Step 1: Identify the Problem

✓ Step 2: Determine Vulnerabilities

✓ Step 3: Investigate Options

➔ Step 4: Evaluate Risks & Costs

Step 5: Take Action

Tools:

[Guidelines for Considering Traditional Knowledges in Climate Change Initiatives >](#)

[Local Environmental Observer \(LEO\) Network >](#)

[Scenarios Network for Alaska + Arctic Planning \(SNAP\) Tools >](#)

[Seven Generations–Community-Based Environmental Planning >](#)

Topic:

[Arctic >](#) [Arctic Oceans, Sea Ice, and Coasts >](#)

[Coastal Flood Risk >](#) [Coastal Erosion >](#)

[Tribal Nations >](#) [Disaster Risk Reduction >](#)

[Tribal Nations >](#) [Relocation >](#)

Relocating Kivalina

Rising seas and coastal erosion are eating away at the barrier island on which the Alaska Native Village of Kivalina rests. Residents and others are making concerted efforts to move the community to safety.

Additional Resources:

[ANTHC | Climate Change in Kivalina, Alaska: Strategies for Community Health \(PDF\) >](#)

[Re-Locate Kivalina | Re-Locate Receives 2015 ArtPlace America Grant >](#)

[Alaska Community Coastal Protection Project | Kivalina Project Page >](#)

[U.S. Army Corps of Engineers | Relocation Planning Project Master Plan for Kivalina, Alaska \(PDF\) >](#)

Partners:

[Native Village of Kivalina >](#)

[Kivalina Relocation Planning Committee >](#)

[U.S. Army Corps of Engineers | Alaska District >](#)

[U.S. Bureau of Indian Affairs >](#)

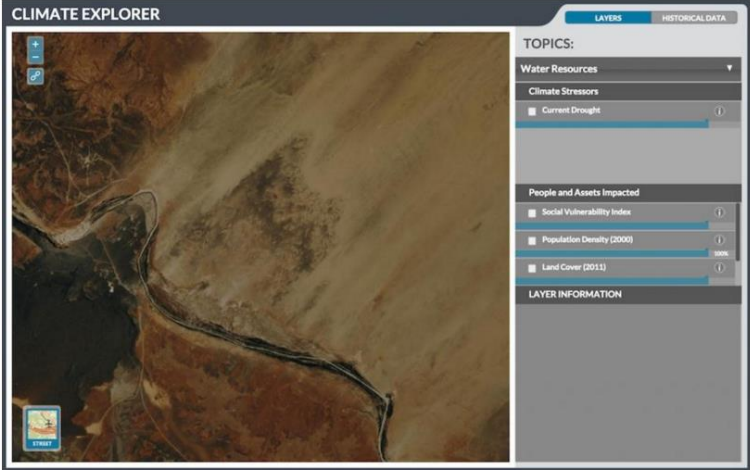
Sidebar links to each Case provide Rich Resources

Stage of progress, Topical Cross-links, Resources, Data, & Partners

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
BIA Tribal Climate Resilience Program (Sealaska MBS Contractor, Denver, CO)
Margaret.Herzog@bia.gov, (720) 484-3353, work cell (720) 630-3817

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Tribal Nations: Climate Explorer



This image shows a satellite view of the Grand Falls Dune Field (the same area shown in the annotated image above) in the Climate Explorer tool.

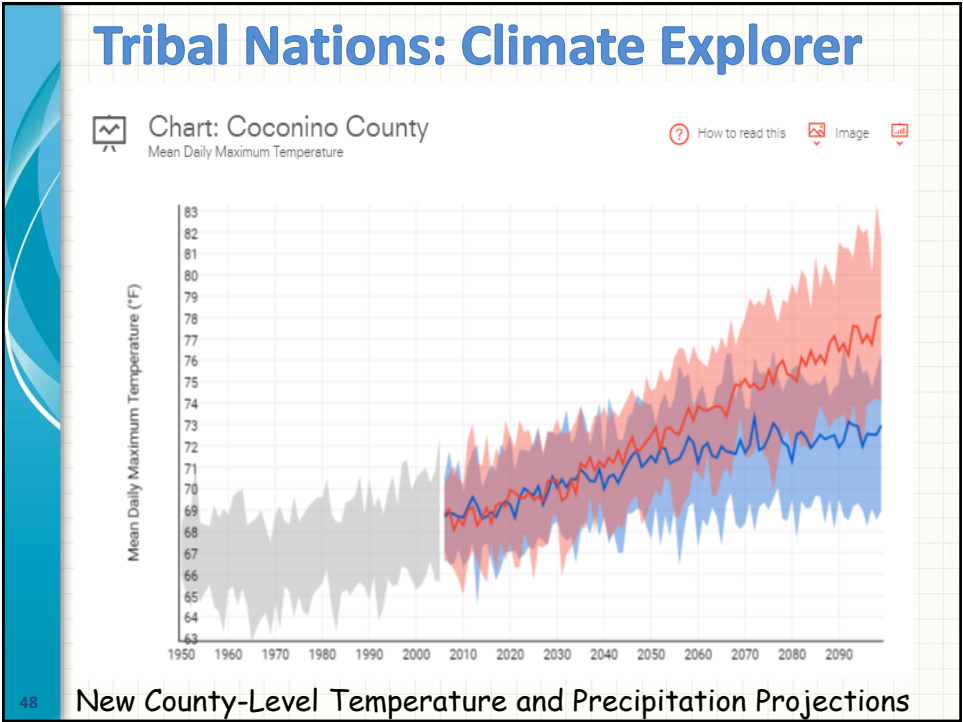
You can explore the dune field and climate data in the interactive tool yourself, or follow the instructions below. To get started, click the Climate Explorer image above to open the tool in a new browser window. You'll need to come back to this tab to read the descriptions and instructions for the guided exploration.

1. What does the dune field look like?

- Zoom out a couple of steps to get a big picture view of the region. What do you see in the image that indicates the prevailing wind direction?

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Scroll to bottom of Tribal Nations Cases to Explore Map



Tribal Nations Cases

Taking Action

Clear Filters

Filter by climate threat/stressor: ▼

Filter by parent topic: ▼

Filter by steps to resilience: ▼

Filter by region: ▼

Communities and businesses are taking action to reduce their vulnerability to climate-related impacts and to build resilience to extreme events. The stories below illustrate the application of the process and tools featured in this Toolkit. Browse the stories, or filter by topic, step to resilience, and/or region in the boxes above. To expand your results, click the Clear Filters link.

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As ice retreats and energy resources along Alaska's North Slope become more accessible, diverse stakeholders consider potential futures and develop a science-informed view of the implications of development in the region.
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[Read more >](#)

Navajo Nation- Hotter, Drier

Preparing to Respond to Oil

Suquamish Build Resilience

Confederated Salish and

Other Recommended Cases to Include???

Please recommend other Alaska Native Taking Action Cases



DATA TOPICS ▼ IMPACT APPLICATIONS DEVELOPERS CONTACT

 CLIMATE — TRIBAL NATIONS

Themes ▼ Data Resources ▼ Challenges Feedback



Tribal Nations are disproportionately affected by climate change, yet many lead the nation in building awareness and addressing climate impacts to their traditional lifeways. Through renewable

TRIBAL NATIONS & ARCTIC THEMES IN THE NASA CLIMATE DATA INITIATIVE @ DATA.GOV

<http://www.data.gov/climate/tribal-nations/>
<http://www.data.gov/climate/arctic/>

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Tribal Nations Theme Components

- Overview / Framing Questions
- GIS Datasets for Indian Lands, Ceded Lands
- Resources > Maps (interactive and printable)
- Resources > Tools (by subtopic)
- Resources > Featured Content
- Mapping Challenges

Organizes [Tools](#) and [Taking Action Stories of Resilience](#)

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Arctic & Tribal Nations Theme: Data

Tribal Nations Data

Indian Lands datasets are difficult to understand. Other data sharing questions.

Tribal Nations Data

[BIA Indian Lands Dataset \(Indi](#)

[Indian Land Areas Judicially Es](#)

Generally, climate data by themes States, except for differences in data resources:

Arctic Theme – Related data, t 567 federally recognized tribe

Coastal Flooding Theme – Rel and other communities living a associated with growing storm

Ecosystem Vulnerability – Rel integrity and stability of ecosy which Tribal Nations tradition

CLIMATE — ARCTIC

Themes ▾ Data Resources ▾

Arctic Data

The U.S. government and its partners hav organized around seven different topic ar

- [All Arctic data](#)
- [Arctic Ocean, Sea Ice, and Coasts](#)
- [Melting Glaciers, Snow, and Ice](#)
- [Arctic Weather and Extreme Events](#)
- [Permafrost and Arctic Landscapes](#)
- [Arctic Development and Transport](#)
- [Arctic Peoples and Ecosystems](#)
- [Arctic-Global Teleconnections](#)

Topic Categories:

Arctic ▾ Arctic Ocean, Sea Ice and Coasts ▾

Topics:

Climate ▾

Filter by location

Enter location...

118 datasets found

NOAA Climate Data Record (CDR) of Sea S

of 57 recent views

National Oceanic and Atmospheric Administra Surface Bundle (OSB) Climate Data Record (CDR) surface atmospheric properties, and heat fluxes...

NeiCDF HTML HTML HTML application/vnd...

Maritime Limits and Boundaries of United S

National Oceanic and Atmospheric Administrat for depicting on its nautical charts the limits of the Contiguous Zone, and 200 nautical mile...

HTML WMS HTML WMS

NOAA Optimum Interpolation 1/4 Degree Analysis, Version 2

of 25 recent views

National Oceanic and Atmospheric Administrat sea surface temperature (SST) analysis product w technique. The SST analysis has a spatial grid...

HTML NeiCDF NeiCDF HTML HTML HTML

National Solar Radiation Data Base

of 23 re

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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Tribal Nations Theme: Map Gallery


Tribal Nations Maps

The Tribal Nations Map Gallery includes printable PDF wall-map versions (24×36) of the Indian and Ceded Lands Web Services found in the data tab.


The Map Gallery also includes interactive maps from federal partners, intertribal groups, and a tribal climate map showcase of example work products to inform climate resilience efforts of tribes, Alaska Natives, and other diverse communities nationwide.




Indian Lands in the United States




Indian Land Areas Judicially Established 1978 and American Indian Reservations




DOE Tribal Energy Programs




Great Lakes Indian Fish and Wildlife Commission Maps




DOI Climate Science Centers



DOI Landscape Cooperatives



USDA Climate Hubs



USFS Tribal Connections - US Forest Service Indian Lands Map Viewer

Interactive data access and printable maps
Can add region-specific climate maps here or keep private!

53

ArcOnline: Interactive Story Maps

Alaska Natives, Climate Factors, and Resilience

Rising Temperature

Sea Ice

Tundra Greenness

Coastal

Shifting and Invasive Species

EDIT

B

I

I_x

A

Size

1

2

3

4

5

6

This Map demonstrates where imperiled communities are located according to USACE baseline erosion studies conducted 2006-2008 confirmed in a 2009 GAO report. Select a community to

Kotlik

Bill Moore's Slough

Alakanuk

Nunam-Iqua

Algaaciq (St Mary's)

Scammon

Paimliut

Rooper Bay

Umku

Tribal Information

Name

Short Name

LCC Name

Fact Sheet

GAO Imperil

Identified

Newtok Village

Newtok

Western Alaska

[More info](#)

-1

USACE

Names (Federal Register): Newtok Village

Federal Links: Select the Agency Acronym for the full Agency Fact Sheet and the link to its right for a more specific regional contact or homepage.

Tribal: Official Website (or group site)

BIA Region: Alaska Regional Fact Sheet

DOE: AK

CSC: Alaska

LCC: Western Alaska

FWS: Alaska

USDA CLIMATE HUB: Pacific Northwest

USDA NRCS Locator: USDA USFS: Alaska

NOAA Region: RISA: ACCAP

EPA: R10

FEMA: R10

HUD: Alaska

Awards

Documents

Examples

Data & Maps

ACCIMP Community Planning Grant for: Newtok

Alaska Community Coastal Protection Project (ACCPP): Newtok Planning Group

GAO 2009 Imperiled Community Identified by USACE

USACE 2009 Priority Action Report

Association of Village Council Presidents

Calista Corporation

Tools

Access to TCR Resources from Interactive Map and back to Data & Maps of each Tribal Fact Sheet

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Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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BIA GIS Web Portal: Awards Map – new!

Tribe or Group Name: Walker River Paiute Tribe of the Walker River Reservation, Nevada

Total Amount Funded: \$147363

Number of Awards: 4

Award Details + Climate Resources: [Fact Sheet](#)

Names (Federal Register): *Newtok Village*

Federal Links: Select the Agency Acronym for the full Agency Fact Sheet and the link to its right for a more specific regional contact information.

| Agency | Region | Website |
|--------|--------------|-----------------------------------|
| DOE | AK | DOE AK |
| FWS | Alaska | FWS Alaska |
| NOAA | Region, RISA | NOAA Region, RISA |
| HUD | Alaska | HUD Alaska |
| USDA | NRCS | USDA NRCS |
| USDA | USFS | USDA USFS |
| FEMA | R10 | FEMA R10 |

Awards

- ACCOMP Community Planning Grant for: Newtok

Documents

- Alaska Community Coastal Protection Project (ACCPP), Newtok Planning Group
- GAO 2009 Imperiled Community Identified by USACE
- USACE 2009 Priority Action Report

Examples

- CAKEX Case Study: Relocating Newtok due to Coastal Erosion
- News Article: It's Happening Now: The Village is Sinking
- UA Research: A Migratory House for Villages on the Move

Data & Maps

- SNAP Community Climate Change: historical & Projected Temperature & Precipitation

Groups

- Association of Village Council Presidents
- Calista Corporation

Tools

See new Awards Map in list of Tools at the top of the BIA TCRP homepage! Access to TCR Resources from Interactive Map and back from Data & Maps of each Tribal Fact Sheet

3. STEPS IN CONSIDERING CLIMATE

```
graph TD; Evaluate --> DetectProblem; DetectProblem --> GatherUseInformation; GatherUseInformation --> ReDefineProblem; ReDefineProblem --> DevelopOptions; DevelopOptions --> AssessOption; AssessOption --> SelectOption; SelectOption --> ImplementOption; ImplementOption --> MonitorOption; MonitorOption --> Evaluate; subgraph Understanding; DetectProblem; GatherUseInformation; ReDefineProblem; end; subgraph Planning; DevelopOptions; AssessOption; SelectOption; end; subgraph Managing; ImplementOption; MonitorOption; Evaluate; end;
```


Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
BIA Tribal Climate Resilience Program (Sealaska MBS Contractor, Denver, CO)
Margaret.Herzog@bia.gov, (720) 484-3353, work cell (720) 630-3817

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Tribes will not make decisions based solely on Climate & Weather

- Tribes must be able to integrate climate information with their other value drivers
- Information must be relevant to their values & motivations
- They must trust the information source
- Adaptation is easiest understood through a resilience lens and a path walked by others


Per NOAA David Herring on Climate Resilience Toolkit WebEx 6/10/15 presentation



Water Resources



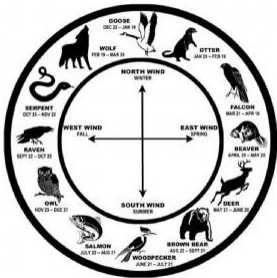
Development Pressure



Energy Costs

1. Pick a Model, Preferably Tribally-based

- A Framework for understanding a process towards adaptation to provide a path to resilience is key!
- Circle diagrams demonstrating an interactive, stepwise spiral process make sense to most
- Like [Swinomish IHI](#) and [Menominee SDI](#), consider developing your own based on deep help beliefs
- Example – Use Northern Tribes Medicine Wheel concept to focus on health, community, and interconnected meaning



2. Pick Process: 5-Step Adaptation Workflow from the U.S. Climate Resilience Toolkit

Step 1: Identify the Problem

Step 2: Assess your vulnerability

Step 3: Identify options to build resilience

Step 4: Evaluate the risk and choose the best option

Step 5: Implement – Take Action!

➤ Implement plan & monitor progress toward your goals

➤ Adjust your plan as necessary and iterate as often as needed

➤ Share your story; keep in mind failures and setbacks are also useful for others to learn

Per NOAA David Herring on Climate Resilience Toolkit WebEx 6/10/15 presentation

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A Conceptual Model for Building Resilience

Climate Stressors

Non – Climate Stressors

Impacts and Hazards

Sector Specific Resources and Services (Values)

Actions to Build Resilience

➤ Communities will not make decisions based on climate alone

➤ Must be integrated with other stressors across multiple sectors

➤ Driven by values

➤ Leads to recognition and understanding of vulnerability and linked actions to build resilience

Per NOAA David Herring on Climate Resilience Toolkit WebEx 6/10/15 presentation

UNC ASHEVILLE
NEMAC
NATIONAL ENVIRONMENTAL
MODELING AND ANALYSIS CENTER

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Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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Another Conceptual Model for Building Resilience: EPA / ICLEI

Planning

- Develop Options
- Assess Option(s)
- Select Option(s)

Understanding

- (Re)Define Problem
- Gather/Use Information
- Detect Problem

Managing

- Evaluate
- Monitor Option and Environment
- Implement Option

- Climate Change Indicators
<http://www.epa.gov/climatechange/science/indicators/index.html>
- State and Local Climate Action Framework
<http://www.epa.gov/statelocalclimate/>
- EPA Risk-Based Workbook
<https://www.epa.gov/cre/risk-based-adaptation>

See <http://icleiusa.org/tools/adapt/> for more tools

3. Train: NAU ITEP Tribes and Climate Change Nationwide Focus & Adaptation Planning Course

U.S. Climate Resilience Toolkit

Get Started Taking Action Tools

Tools > Tribal Climate Change Adaptation Planning Toolkit >

Tribal Climate Change Adaptation Planning Toolkit

This collection of templates and other resources assists tribes in their climate change adaptation planning process.

The Northern Arizona University Institute for Tribal Environmental Professionals (ITEP) established its Tribal Climate Change Program in 2009 to provide support and be responsive to the needs of tribes that are preparing for and currently contending with climate change impacts. This program offers training, technical assistance, educational resources, and tools to build the capacity of tribes to address climate change impacts.

The Tribal Climate Change Adaptation Planning Toolkit is a collection of templates and other resources developed by ITEP to assist tribes in their climate change adaptation planning process. The materials provided are not "one-size-fits-all" solutions, and users are encouraged to modify the materials to better represent the needs and priorities of their own tribe. The primary users of these materials will be the tribes' climate change adaptation planning process and participants in the regularly offered Tribal Climate Change Adaptation Planning Toolkit as part of the curriculum in

Webpage:
[Tribal Climate Change Adaptation Planning Toolkit >](#)

Topic:
[Tribal Nations > Assessment and Planning >](#)

Taking Action:
[Mescalero Apache Tribe Adapts to a Warmer and Drier Climate >](#)

Training/Tutorials:
[ITEP Tribal Climate Change Trainings >](#)
[ITEP Tribal Climate Change Webinars >](#)

See next course offerings at New & Improved Website!

http://www7.nau.edu/itep/main/Training/training_cc

NWF ClimateSmart Conservation through FWS NCTC Planning Course & Tools

(Tribal Adapted Versions sponsored by CSCs!)

Climate-Smart Conservation provides guidance to natural resource managers and conservation professionals for carrying out climate adaptation and incorporating climate considerations into their work. Developed collaboratively by a federal, state, and non-governmental organization (NGO) expert workgroup, the peer-reviewed 262-page publication is available in both hardcopy and electronic form. A companion training course based on the guide is offered through the U.S. Fish and Wildlife Services National Conservation Training Center (see link at right).

The guide provides an overview of how climate change may affect species and ecosystems, offers general principles for successful climate adaptation, and outlines a set of "key characteristics" of climate-smart conservation. The guide is organized around a generalized framework for adaptation planning referred to as the "climate-smart cycle." This approach acknowledges that user needs, capacities, and resources are variable, and that there is no one-size-fits-all for adaptation planning. Instead, climate-smart conservation emphasizes the need for using an intentional and transparent process to assess climate-related

```
graph TD; 1((1. Define planning purpose and scope)) --> 2((2. Assess climate impacts and vulnerabilities)); 2 --> 3((3. Review/revise conservation goals and objectives)); 3 --> 4((4. Identify possible adaptation options)); 4 --> 5((5. Evaluate and select adaptation actions)); 5 --> 6((6. Implement priority adaptation actions)); 6 --> 7((7. Track action effectiveness and ecological response)); 7 --> 1; 2 -.->|Revisit planning as needed| 1; 3 -.->|Adjust actions as needed| 6;
```

URL:
<http://www.nwf.org/climatesmartguide>

Webpage:
[National Wildlife Federation | Guide to Climate-Smart Conservation](#)

Topic:
[Ecosystem Vulnerability](#) >
[Biodiversity Conservation](#) >
[Tribal Nations](#) > [Assessment and Planning](#) >

Training/Tutorials:
[U.S. Fish and Wildlife Service | Climate-Smart Conservation Course](#) >

Partners:
[National Wildlife Federation](#)

See next course offerings
<http://training.fws.gov/courses/programs/climate-change/schedule.html>

Communicating Climate Change: [OUT8041](#)
ClimateSmart w Scenario Planning [ALC3187](#)

Model Forest Policy Program – Climate University

12-member annual cohort

<http://www.mfpp.org/csu/>

Climate Solutions University: Protecting Natural Resources & People

Climate change is fundamentally impacting the people, natural resources, and economy in your community.

Is your community adapting to protect what makes your region special and prosperous?

The time to act is now. But what does action mean as it relates to a changing climate?

Action means smart, strategic planning. It also means bold leadership to address current and pending challenges. Will you step up and guide your community to make sure it remains a thriving place in the face of climate change? If so, we are here to help with one of the most innovative programs in the country.

Our program, *Climate Solutions University: Protecting Natural Resources & People*, shepherds you and your team through a strategic process to determine where your community is most vulnerable to climate change, AND what to do about it.

Contact us

First Name:

Last Name:

Organization:

Zip Code:

Phone Number:

Email:

How can we help you?

We respect your [privacy](#)

More than 4 Tribal participants to date from around the nation

- Alaska Norton Bay
- Tulalip
- Red Lake
- Nez Perce

4. Find Partners: Many New University-based Climate Adaptation Support Programs Developing Regularly –
MORE federal and nonprofit partners covered in Session 2!

W

CLIMATE IMPACTS GROUP

ABOUT OUR WORK LEARN ACT RESOURCES NEWS AND EVENTS

TOGETHER WE WILL

INCREASE CLIMATE RESILIENCE

LEARN MORE

• PennState SCRIM

<http://www.scrimhub.org>

Opportunities News Events Resources

a transdisciplinary research network for Sustainable Climate Risk Management


A few most used by Tribes

• UW Climate Impacts Group

<https://cig.uw.edu>

• Desert Research Institute

<https://www.dri.edu>



• Climate Readiness Institute

<http://climatereadinessinstitute.org>

• Georgetown Climate Center

<http://www.georgetownclimate.org>

GEORGETOWN CLIMATE CENTER

A Leading Resource for State and Federal Policy

Home About Us Clean Energy Adaptation Transportation

State and Local Adaptation Plans

4. CREATING AN AWARD WINNING CLIMATE PROPOSAL

Foundations

Corporations

Grants

State

Federal



Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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Steps for Winning an Award

- Obtain Climate Adaptation Training
- Attend Tribal Networking Meetings
- Review Climate Adaptation Plans
- Select an appropriate model with community input
- Discuss climate issues and emphasis with community and all other departments
- Find agency, inter-tribal, and local & state partners
- Associate with academic institution, non-profit, and / or private / public climate adaptation consultant
- Hire Climate Coordinator and volunteer support
- Continually work with all stakeholders as move forward

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Tips for Winning an Award

- Include short, alluring executive summary
- List a variety of partners
- Leverage other agency and group funds
- Provide Tribal Cost share
- Don't ask for maximum limit, if can do it for less, think about an interative process, so just year-by-year need
- Detail budget and cost share for all items same sheet
- Make schedule and milestones clear
- List work products - an adaptation plan, vulnerability assessment, datasets, maps, etc.
- Provide resumes and letters of support
- Focus on community capacity building, not research

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BIA Climate Program Highlights

- Federal agencies will work to improve coordinated tribal support
- BIA is the designated federal lead agency to support tribes
- **BIA Climate Coordinator** position is currently vacant
- BIA Climate Website, News, Portal, Services, Network Expanding
- BIA placing tribal liaisons in DOI Climate Science Centers (CSCs)
- Join! Your DOI Landscape Conservation Cooperatives (LCCs) and Free! TCUs may join Cooperative Ecosystem Studies Units
- **Join!** BIA Climate News to know when to
APPLY! for FY17 Climate Funding

Contact Margaret.Herzog@bia.gov (720) 484-3353 to schedule a WebEx for climate tools, resources, or mapping / modeling needs

5. APPLYING INDIGENUITY

Forthcoming Webinar Series:
Applying Indigenuity
Native Communities Adapting to
Weather Extremes and Climate Variability
Indigenous Pathways to Community Preparedness,
Resilience and Adaptation Planning



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Dr. Dan Wildcat has issued a **RED ALERT** to all!

- Learn from non-"weeds" who've lived in symbiotic relationships with nature from time immemorial
- Deep awareness and communication with all living beings as relatives vs. reductionist science by discipline
- "*Learning by doing*" - everything is an experiment, evolving in concert and pace with ecosystems of place
- Those in constructed reality forget about emergent properties of complex systems; even the smallest neglected interrelationship or feedback may impact
- No dualisms / dichotomies – many paths & ways
- Combat lack of imagination with INDIGENUITY!
- **Tribal Nations** can help build Homeland Maturity

Red Alert!: Saving the Planet with Indigenous Knowledge by Professor Wildcat, Haskell Env Prog.

Applying Indigenuity

We have a lot to benefit from by honoring the tribal view that we are not in control, none of us know it all, and that as human beings, we are a product of a long-standing relationship between people and place

- incorporate diverse cultures and tribal identities into projects that emerge from a symbiotic relationship with, not in opposition to, nature
- tap into roots, move outside the conceptual boxes to re-situate technology in a different environmental framework while we all “bring our ‘minds’ together

From <http://www.boulder.noaa.gov/news-040716> based on
NASA ESRL March 2016 Presentation by Professor Wildcat, Haskell Env Prog

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Seven Generation Philosophy

Building Resilience for Future Generations

Onondaga Nation, Chief Oren Lyons

When you sit and you council for the welfare of the people, think not of yourself nor of your family nor even your generation. Make your decisions on behalf of the seventh generation coming. Those faces looking up from the earth, layer upon layer, waiting their time.



The Future is Looking to Us

Photo and Caption by Art Ivanhoff
Bering Sea Alliance, LLC
<http://www.beringseaalliance.com>

Quote from Lyons, O. April 2008. Oren Lyons: Looking Toward the Seventh Generation. Presentation, American Indian Studies Program, University of Arizona, Tucson, Arizona
<https://nnidatabase.org/db/video/oren-lyons-looking-toward-seventh-generation>

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Session 2. Leveraging Networks and Partnerships to Build Tribal Resilience

Planning and Implementation Support Networks

Margaret Herzog, PE, PMP, PhD
BIA TCRP IT/GIS Systems and Services

R9 Tribal EPA Conference, Session 2 of 2
Wednesday, 10/23/16 2:45-3:45PM

Session 2 of 2: Weaving and Leveraging Connections

@ 2:45 after the break

Resilience

General
Vs.
Specified

Sociology
and
Institutional
Theory

Introduction
to Social
Network
Analysis

SNA

Ad-Hoc
Social
Networking
vs.
Systematic
Network
Weaving
(Valdis Krebs,
orgnet.com)

Discussion
and
Application



MAXIMIZING CLIMATE COLLABORATIONS



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Resilience

- 1. Specified Resilience**
Threshold on underlying controlling variable
Changes slowly relative to variable of concern
- 2. General Resilience**
Ability to absorb unexpected shocks
Community's ability to *pitch in* as needed

Walker, B.H., and D. Salt. 2012. Resilience Practice: Building capacity to absorb disturbance and maintain function. Island Press, Washington, D.C.

**Systematic, conscious network weaving may help
improve general resilience faster!**

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Underlying Social Structure

BELIEFS – *shared* views about what is true “equality”

VALUES – *shared* preference system of “right, beautiful”

NORMS – *shared* expected patterns of behavior *by role*
(NOT Schwartz-type *personal* norms, but
descriptive and injunctive social norms)

SANCTIONS – rewards for “*normalizing*”, penalties if do not!

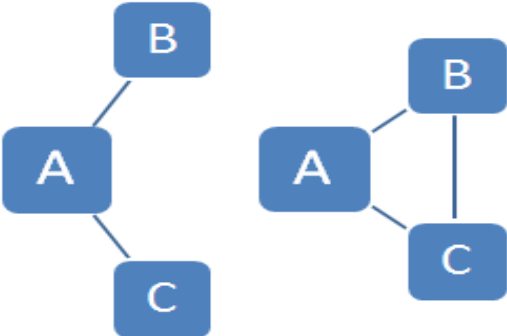


Each group link represents more potential understanding and access, less opposition (us vs. them) , if bridged...

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Network Concepts – Triadic Closure

If A is friends with both B and C, over time they will often be introduced, leading to at least a weak tie, and more often a strong tie, since likely to also exhibit similar [homophily](#)



<http://www.stanford.edu/dept/soc/people/mgranovetter/documents/granstrengthweakties.pdf>

?



Triad closure bias – If a friend of yours isn’t a friend of mine, we’re more likely to sever or weaken ties in time, as well

EMERGENCE

Whole different from sum of its parts

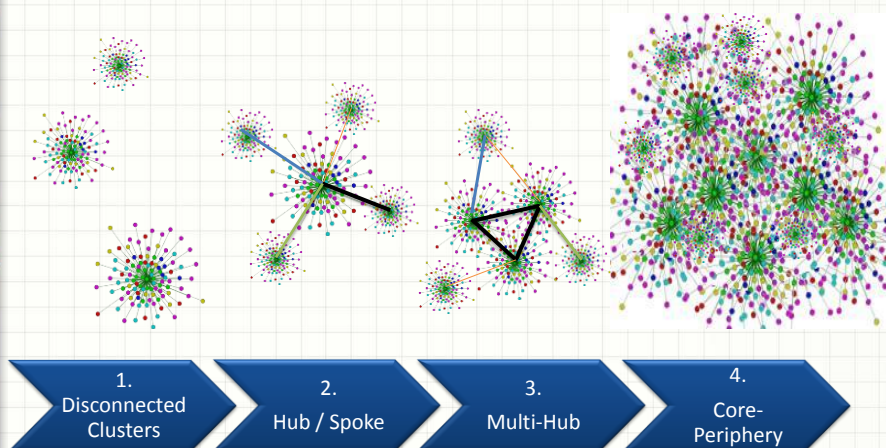
EMERGENT PROPERTIES

- Resulting when a thing relates in some way to another thing What results when *many* things relate to *many* other things? Results in machine-like or organism-like properties at scale
- Should you only study resource users individually? Or should you also consider the self-organizing, evolving characteristics of groups, organizations, and institutions?
- An organization is a *rarified* constituency, **NOT** a *group* – Trout Unlimited does not represent all anglers, but a shared, *motiving* organizational mission staffed by lawyers, policy experts, and scientists with *formalized* values, beliefs, norms, and sanctions

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SNA Network Maturity Model: Becoming a *Network Weaver*



Adapted from [Krebs 2006](#), [Zolli & Healy 2012](#)

Systematically evaluate gaps and hubs and then seek to improve overall structure

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SNA – Benefits of a Systematic Approach

• Ad-hoc Collaboration

- ☐ Tend to focus on one sector
- ☐ Regulators considered enemies
- ☐ Community token role
- ☐ Uncoordinated activities
- ☐ Tend to be too localized or federal
- ☐ Grant funding widely dispersed
- ☐ Few powerful, knowledgeable leaders control the agenda
- ☐ Few ways to be heard, considered
- ☐ Project permitting drawn out
- ☐ Scramble in an emergency
- ☐ Distrust, hardened positions
- ☐ Limited funding and resources
- ☐ Overlapping info, since don't share
- ☐ Projects not assessed
- ☐ Ongoing monitoring limited to regs
- ☐ Community suspect of groups
- ☐ Brokering / Bridging is discouraged

• Network Weaving

- ☐ All levels of government/regulators
- ☐ All county / city departments active
- ☐ Business plays key resource role
- ☐ Academics help all "learn by doing"
- ☐ Network continually matures
- ☐ Funding continually increases
- ☐ More groups volunteer to join
- ☐ More individuals join groups
- ☐ Community members multiple hats
- ☐ Industry sponsors improvements
- ☐ Grant funding matched and shared
- ☐ Multi-faceted, multiple coordinators
- ☐ Expedited permitting processes
- ☐ Ready to meet unknown challenges
- ☐ Communicate informally, too
- ☐ Meet regularly
- ☐ Have more fun
- ☐ Adapt and transform

Other benefits?



Institutional Entrepreneurs

(Bodin & Prell, 2011)

- Experts in building trust and resolving conflicts
- Mobilize key resources from various groups
- Navigate socio-ecological transition zone
- Respond to crisis with pre-planned adaptive mode
- Transform failing systems
- Strengthen informal networks by coalition building
- Knowledge brokering
- Foster exchange and collaboration

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SO THEN.... WHO ARE YOUR POTENTIAL TRIBAL CLIMATE COALITION PARTNERS?

***And how might we all better support
one another through enhanced
coordination and communication?***

DOI Climate Science Centers Support Tribes

- ✓ BIA Tribal Climate Liaisons being placed in each CSC
- ✓ Tribal reps help guide [Advisory Committee on Climate Change and Natural Resource Science](#)
- ✓ Climate Research Projects and Training for Tribes
- ✓ Download climate data and research reports
- ✓ [Guidebook for Traditional Knowledges, and a Primer for Climate Change and Indigenous Peoples](#)
- ✓ Some TCUs and tribes serve in CSC consortiums
- ✓ [Work with your CSC](#) to ensure in 5-year reauthorization TCU, tribes or intertribal groups become consortium members



NATIONAL *fish, wildlife & plants*
CLIMATE ADAPTATION STRATEGY

<http://www.wildlifeadaptationstrategy.gov>

- ✓ *Shared Solutions to Protect Shared Values*
- ✓ Seven Strategies to Ensure Resilient Ecosystems
- ✓ Video, Brochure, Full Report, Background Papers
- ✓ Taking Actions (Using the Strategy)
- ✓ Engagement (Getting Involved and Involving Others)
- ✓ Learn More about Impacts & Adaptation
- ✓ Adaptation Leadership Award Honors Innovators
- ✓ Case Studies by Region and Habitat Type
- ✓ Join [Landscape Conservation Cooperatives \(LCCs\)](#)!

EPA Tribes & Climate Support

- EPA Tribal Portal <http://www2.epa.gov/tribal/>
 - iGAP funding, EcoAmbassadors, TSC, Alerts
- Tribal addition to Local Climate Action Framework
 - On-demand training, tools, resources, more...
- Tribal Green Building Codes
<http://www3.epa.gov/region09/greenbuilding/codes/>
- Climate Indicators
<http://www3.epa.gov/climatechange/science/indicators/>
- Tribal Pages (Not climate-specific, but tribal programs!)
- Climate Pages (Adaptation, Mitigation, Air, Water, Wastes)
- Regional Pages – contact your EPA RO Tribal Liaison
- See the [EPA Agency Fact Sheet](#) in the Tribal Climate Resilience Resource Guide



USDA Tribes & Climate Support

- County Extension or Conservation Districts – helpful, but may not be aware of tribal programs, so contact [Intertribal Ag Council](#) for up-to-date grants
- Contact your USDA [State Service Center](#)
- Visit your [NRCS](#) District Office
- Contact your [Regional Climate Hub](#)
- Work with your USDA & [USFS Tribal Liaisons](#)
<http://forestadation.org>



DOE Tribal Energy <http://energy.gov/indianenergy/>



Indian Affairs IEED [Tribal Toolkit](#) support and
Tribal Info Clearinghouse <http://teeic.indianaffairs.gov/>

TEEIC

Tribal Energy and Environmental Information CLEARINGHOUSE

Environmental resources for tribal energy development

Office of Indian Energy and Economic Development

Energy Resources

Assessments/Monitoring

Laws & Regulations

Home

News

FAQ

Glossary

The Tribal Energy and Environmental Information Clearinghouse (TEEIC) provides information about the environmental effects of energy development on tribal lands.

The site includes information about energy resource development and associated environmental impacts and mitigation measures; guidance for conducting site-specific environmental assessments and developing monitoring programs; information about applicable federal laws and regulations; and federal and tribal points of contact.

Energy Resources

Energy resource development, environmental impacts, legal requirements, mitigation measures, programs/incentives, and case studies.

Biomass

Carbon Sequestration

Coal

Geothermal

Hydrokinetic

Low-Head Hydropower

Oil & Gas

Solar

Transmission

Wind

Efficiency & Conservation

Assessments & Monitoring

How to prepare project-specific impact assessments, identify appropriate mitigation measures, and develop monitoring programs.

Site-Specific Assessments

Monitoring Programs

Laws & Regulations

Federal laws and regulations applicable to energy development on tribal lands.

Acoustics (Noise)

Air Quality

Cultural & Paleontological Resources

Ecological Resources

Energy Resource Development

Environmental Justice

More...

FEMA and Tribal Nations: A Pocket Guide

<https://www.fema.gov/fema-tribal-affairs>

FEDERAL EMERGENCY MANAGEMENT AGENCY

FEMA

What are you looking for?

Plan, Prepare & Mitigate

Before, During & After a Disaster

Disaster Survivor Assistance

Apply for Assistance, Disaster Declarations

Response & Recovery

Tools, Teams, Individual & Public Assistance

Topics & Audiences

Grants, How to Help, Private Sector, Tribal

Blog, Newsroom, Videos & Photos

News Releases, Social Media, FEMA App

About FEMA

Offices, Careers, Employee Info, Policies, FAQs

Resource & Document Library

Browse

FEMA and Tribal Nations: A Pocket Guide.pdf

Follow FEMA:

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YouTube

Email

RSS

Share/Email This Page

FEMA and Tribal Nations: A Pocket Guide.pdf

Developed by FEMA's Office of External Affairs, this guides provides information and resources that may be helpful to Tribal partners. The guide explains the Agency's policies related to tribal engagement, outlines key FEMA programs and how they specifically relate to federally-recognized tribes, and provides contact information for the Agency's tribal liaisons.

FEMA and Tribal Nations
A POCKET GUIDE

FEDERAL EMERGENCY MANAGEMENT AGENCY

FEMA

2014-11-2015 October 2014

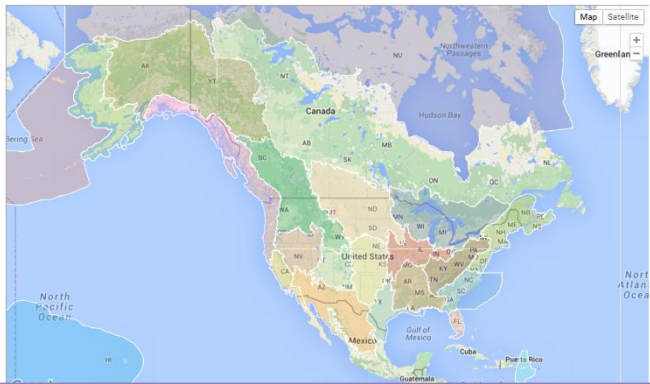
See [Disaster Risk Reduction subtopic](#) in the Tribal Nations Topic in the U.S. Climate Resilience Toolkit

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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DOI Landscape Conservation Cooperatives (LCCs)

Find an LCC: <http://lccnetwork.org/map>, [LCC Fact Sheet](#)



Landscape Conservation Cooperative Network


- Aleutian and Bering Sea Islands
- Appalachian
- Arctic
- California
- Caribbean
- Desert
- Eastern Tallgrass Prairie and Big Rivers
- Great Basin
- Great Northern
- Great Plains
- Gulf Coast Prairie
- Gulf Coastal Plains and Ozarks
- North Atlantic
- North Pacific
- Northwest Boreal
- Pacific Islands
- Peninsular Florida
- Plains and Prairie Potholes
- South Atlantic
- Southern Rockies
- Upper Midwest and Great Lakes
- Western Alaska

- LCCs may collect and analyze phenology data – how ecology is changing, bud bursts, shifting species
- LCCs may have one or more tribes on their steering committee or subcommittees to help prioritize projects
- LCCs assist tribes to coordinate efforts across larger areas, longer-term with more diverse stakeholders

CA LCC California Climate Commons

<http://climate.calcommons.org/>

- Climate change science
- Climate vulnerability assessments
- Climate adaptation planning
- Climate change tools
- Climate change projects
- Climate Datasets and documents



California Landscape Conservation Cooperative

Climate Commons


Home | Datasets | Documents | Web Resources | CA LCC Projects | Get Started | Contact Us

Science and information for climate-smart conservation

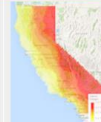
The Climate Commons offers a starting point for discovery of climate change data and related resources, information about the science that produced it, and guidance for applying climate change science to conservation in California.

| Get Started | Commons Library |
|--|---|
| Climate Change Assessments and Reports | Find Climate Change Data |
| Climate-Smart Conservation | Search the Literature |
| Vulnerability Assessment | Web Resources |
| Sea Level Rise | CA LCC Projects |
| Scenario Planning | Compare Tools |
| See more Commons Articles | Search all by Subject or Location |


Featured Climate Assessment Tools



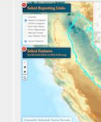
2014 Basin Characterization Model



CalAdapt



Climate Wizard



CA Climate Console

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CA LCC Tribal Team

<http://californialcc.org/tribal-team>

- Chris Bujalski, BIA current team lead
- Dore Beitz, Mewuk incoming lead
- Participate on project proposals
- Guide Ecoregion Adaptation Plans
- TEK Resources
- 2017 adaptation training and webinar series

Desert LCC Tribal Working Group

<https://desertlcc.org/group/tribal-working-group>

- Seeking new Tribal Liaison for expanded Tribal Outreach
- BIA SW and Navajo Regions participate
- 26 Tribes live in Desert LCC area
- Focus Climate Change Conservation Initiatives
- Inter-tribal network

<http://greatbasinlcc.org/tribal-resources>

- Sagebrush Grasslands focus
- BIA Western Region participates
- Climate Projects
- Climate Trainings
- Climate Resources

Tribal Representatives

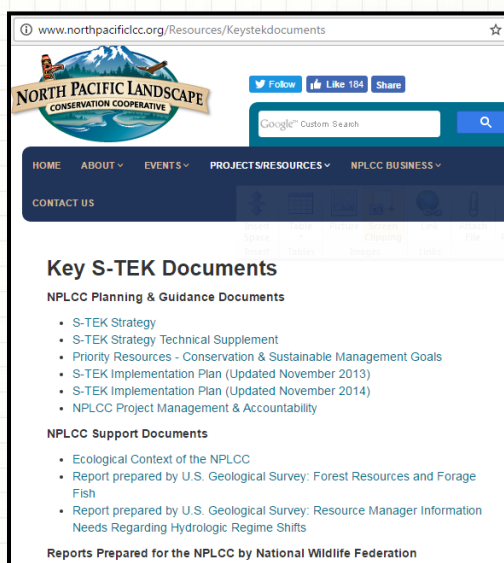
| | |
|------------------|---|
| Ed Naranjo | Confederated Tribes of the Goshute Reservation |
| Kim Townsend | Duckwater Shoshone Tribe |
| Gaylord Robb | Paiute Indian Tribe of Utah |
| Scott Hauser | Upper Snake River Tribes Foundation |
| William Campbell | Inter-Tribal Council of Nevada |



<http://www.northpacificcc.org/NPLCCBusiness/tribes-first-nations-committee>

<http://www.northpacificlcc.org/Resources/Keystekdocuments>

- Annual NW Climate Magazine just released
- Newsletter
- PNW Tribal CC Network collaboration
- Climate Projects
- Climate Training
- Funding Opportunities
- Internships



UofAz NNCAP and SW Tribal CC Network

<http://www.nncap.arizona.edu> (new! website update)



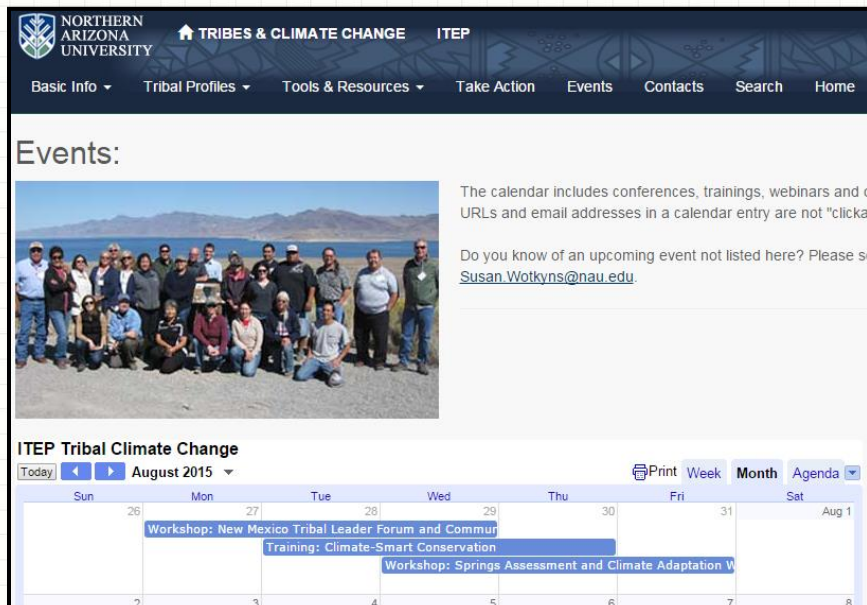
In addition to monthly network calls, contact the program for *specific support* by request!

Example: Tribal Profiles to support proposal development


Co-located with incoming SW BIA Tribal Climate Liaison!

ITEP Adaptation Training, Tools, Resources

<http://www7.nau.edu/itep/main/ClimateChange>



American Indian Higher Education Consortium (AIHEC)

TRIBAL Colleges: *Educating, Engaging, Innovating, Sustaining*

HomeWho We AreWho We ServeWhat We Do

Land and Place

AIHEC has developed a TCU Exchange Network
<https://tcuexchange.org/>

EPA Tribal ecoAmbassadors
The U.S. Environmental Protection Agency (EPA) seeks to strengthen partnerships with Tribal Colleges and Universities (TCUs) to address the most pressing environmental issues. Recognizing AIHEC's unique relationship and the important role TCUs play within their communities, EPA has partnered with AIHEC to support research in partnership with TCUs. One or more TCU professors and students in the use of funding and technical support from EPA to solve environmental problems in tribal communities. Together AIHEC and EPA aim to provide ongoing project support, provide training, and develop resources for tribal communities.

EPA Tribal ecoAmbassadors, USDA, VISTA, and Other Partners
<http://www.aihec.org/our-stories/landPlace.cfm>

TCUExchange

ABOUTTCU/VISTA PROGRAMFOR CONTRIBUTORS

TCUExchange RESOURCE GUIDES

The TCUExchange is a collaborative effort to exchange information that supports TCUs in their pursuit to build minds, communities, and value in Indian Country. The TCUExchange includes resource guides and this online community. The resource guides are short publications that take a holistic approach to describe how a specific resource was developed at a Tribal College or University.

- Bay Mills Community College, Waishkey Bay Farm 2006-2014: How Support Partnerships and Funds were Secured to Build this Research and Demonstration Farm 2014.10
- United Tribes Technical College's Approach to Building Food Sovereignty 1969-2014: Food growing, gathering, preparation, access and security 2014.10

American Indian Science and Engineering Society (AISES)

AMERICAN INDIAN SCIENCE AND ENGINEERING SOCIETY

Become a Member | Member Login

Stay Connected | Donate Now | Contact Us

About AISESMembershipOur ProgramsCareersScholarships & InternshipsNews & EventsSupport AISESNational Conference

Working to Increase the Representation of American Indians and Alaskan Natives in Engineering, Sciences and Other Related Technology Disciplines

Power-Up Workshops

Power Up workshops are designed to boost student engagement in science fairs and to improve the quality and quantity of science fair research and projects entered at the local, national, and international level. The target audience, for these ½ day workshops, is middle and high school students (grades 5 through 12) and their educators.

Learn More

WER UP



<http://www.aises.org>

- Nat. Conf. Annually, next year at NASA in Boulder!
- Student Internships, Scholarships, Mentoring

Indigenous People’s Climate Change Working Group (IPCCWG)

- Dan Wildcat and Bull Bennett started the group
- Meet in the Spring and Fall
- Working Groups meet throughout the year more
- NASA ELO summer intern program prepares college students for climate careers (<http://kiksapa.com>)



https://www.facebook.com/pages/Indigenous-Peoples-Climate-Change-Working-Group/205930409437836?hc_location=timeline

First Nations Development Corp (FNDI)



First Foods, Gardens,
Community Development, Seed Banking
<http://www.firstnations.org>

- Also Works with TCUs and Foundations on Projects
- Helps Communities think through their problems together




Food Sovereignty SUMMIT


This is a forum for sharing and collaboration to build healthy food systems within our com

October 26-29, 2015 • Radisson Hotel • Green Bay, WI

Many New University-based Climate Adaptation Support Programs Developing Regularly – ask closest institution...



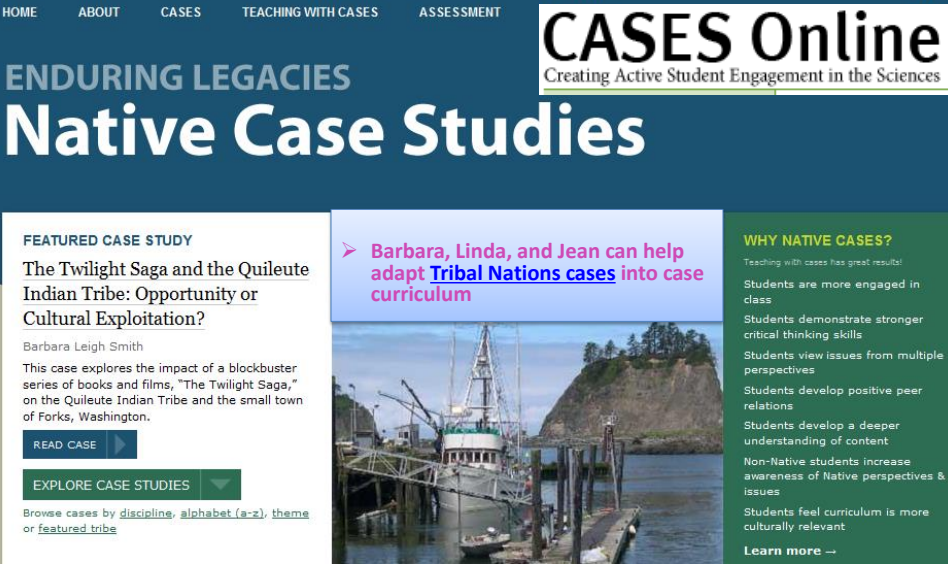
- **PennState SCRIM**
<http://www.scrimhub.org>



A few most used by Tribes

- UW Climate Impacts Group
<https://cig.uw.edu>
- Desert Research Institute
<https://www.dri.edu>
- Climate Readiness Institute
<http://climatereadinessinstitute.org>
- Georgetown Climate Center
<http://www.georgetownclimate.org>

The Evergreen State College Native Cases Project and Emory U. CASES Online




<http://nativecases.evergreen.edu/> & <http://www.cse.emory.edu/cases/>

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
BIA Tribal Climate Resilience Program (Sealaska MBS Contractor, Denver, CO)
Margaret.Herzog@bia.gov, (720) 484-3353, work cell (720) 630-3817

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Early Career Climate Forum



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Forum

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Derived by students from DOI Climate Center Internship Climate Bootcamps

Any student interested in Climate can join!

Majorities of American Catholics and Non-Evangelical Protestants Think Global Warming is Happening; Half of Evangelicals Do As Well

| | Yes | Probably | No |
|---|-----|----------|-----|
| Total Americans (Oct 2010) | 64% | 24% | 12% |
| Catholics (protest) | 74% | 19% | 7% |
| Protestants (non-evangelical) (protest) | 74% | 19% | 7% |
| Evangelicals (protest) | 37% | 30% | 33% |

What is your best estimate that global warming is happening?

Source: Pew Research Center, Oct. 2010

Pope Francis and Re-Framing the Discussion on Climate Change

JUL 20, 2015 • ZACHARY SCHUSTER

The biggest climate change news of 2015 has come from a rather unlikely source: The Vatican of Rome. On June 18th, 2015, Pope Francis released his first encyclical, or papal letter, entitled "... more

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20h

IBM and NREL are developing free and better solar and wind forecasts for the continental US. mashable.com/2015/07/21/wea... pic.twitter.com/P072sUKXof

<https://www.eccforum.org/>

Adapting Climate Tools and Curriculum for Tribes

cake

Climate Adaptation Knowledge Exchange

<http://www.cakex.org>

UCAR

CENTER FOR SCIENCE EDUCATION

<http://scied.ucar.edu>

CASE STUDIES

VIRTUAL

HOME

TEACHERS

STUDENTS

LEARNING ZONE


VISIT NCAR

Adaptation Workbook

Build your own adaptation plan using your expertise, your judgment, and your land.

Use the Workbook

SEARCH CAKE



Climate-Eval

Sharing good practices on climate change and development evaluation

<https://www.climate-eval.org>

Home

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Studies

2014

Framework for Monitoring and Evaluation

By: Harris E. Sanahuja

Study on Framework for Monitoring and Evaluation

<http://www.usaid.gov/climate/>

Alaska Native Knowledge Network

Resources for compiling and exchanging information related to Alaska Native knowledge systems

Home

About ANKN

Publications

Academic Programs

Curriculum Resources

Calendar of Events

Announcements

Curriculum Resources

<http://ankn.uaf.edu>

Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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Climate Tools Haskell Developing

Tribal Lands Collaboratory

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Developments

Welcome to summer of 2

USGS
science for a changing world

NORTH CENTRAL CLIMATE SCIENCE CENTER

USA nprn
National Phenology Network

IPCCWG

Seasonality

Living World

109 **TLC, NEON, Nature's Notebook, and other tools could link!**

Citizen Science and Community Monitoring Programs

CitSci.org ~ Supporting the science you do!

188 projects | 399,695 measurements | 1,221 members | 27,986 locations | 759 protocols

Start a Project

Citizen Science Association
A community of practice for the field of public participation in scientific research.

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USAjobs.gov > Resource Center > Students/Grads
includes BIA Pathways Student Opportunities

Home Search Jobs My Account Resource Center Support

USAJOBS
"WORKING FOR AMERICA"

Resource Center - Main Page
Supplemental Forms
Individuals with Disabilities
Veterans
Students and Recent Graduates

Search on GS-0499 in USAjobs for similar opportunities from USGS and other agencies

STUDENT TRAINEE (BIOLOGICAL SCIENCES), GS-0499-5/7
INTERIOR, BUREAU OF INDIAN AFFAIRS

Agency Contact Information

1 vacancy in the following location:
Location Negotiable After Selection, United States

Work Schedule is Full Time - Internships NTE YEAR

Opened Friday 3/11/2016
(19 day(s) ago)

Closes Friday 4/1/2016
(2 day(s) away)

Salary Range
\$32,318.00 to \$52,043.00 / Per Year

Who May Apply
INDIAN PREFERENCE ELIGIBLES / CURRENT

HOME > WHO WE ARE > BIA > OTS > NATURAL RESOURCES YOUTH PROGRAMS

NATURAL RESOURCES YOUTH AND PATHWAYS INTERNSHIP PROGRAMS



Indian Preference ensures Tribal Students considered first!

5. DISCUSSION
TALKING CIRCLE



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Questions? Contact Margaret T. Herzog, PE, PMP, PhD, IT / GIS Systems & Services
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